APRIL 14, 1952

NEWS ISSUE

Electrical World

Price 35 Cents

A McGRAW-HILL PUBLICATION

Sherman Knapp, Connecticut Light & Power's new president . . . Page 29

Supervisors Make Management Team . . . Page 22

Money for More Electrified Farms . . . Page 50

Turbine production board showing scheduled deliveries of more than one large unit a week is checked by W. Pruessman, Manager of Manufacturing, Large Turbine Dept. and L. E. Newman, Manager of Marketing. Square indicators show units complete through April, 60% complete through May.

G-E turbine output to top 5,000,000 kw in '52

Larger in area than two football fields, this new addition to the Schenectady turbine plant will provide extra capacity to take care of expanding demands.

Shipments averaging 5 wks. ahead of contract dates as utilities push expansion programs

Pointing up the rapid advances being made by the electric utility industry in keeping ahead of expanding demands for electric power, G-E production of large turbine-generators will hit a new high of 5,000,000 kw for 1952.

Five times the average production of any prior expansion period, this record output is evidence of the part being played by General Electric in helping the electric power industry speed its present multi-billion dollar expansion program.

Also of interest is the fact that turbines manufactured during 1951 were completed on the average five weeks ahead of contract dates.

With a new 150,000 square foot addition to the Schenectady turbine plant now nearing completion, even greater production—estimated at over 6,000,000 kw—is projected for 1953.

Through the steady growth and improvement of its turbine manufacturing facilities, General Electric expresses its confidence in the continued healthy expansion of the electric utility industry. General Electric Co., Schenectady 5, N. Y.

301-192

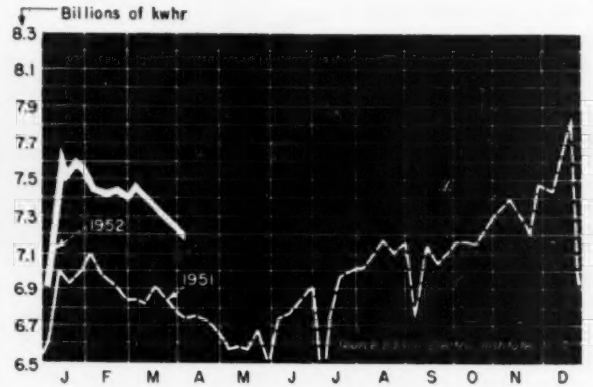
MORE POWER TO AMERICA

GENERAL ELECTRIC

VOLUME 137, NO. 15

April 14, 1952

Electrical World



Output Week Ended April 5—7,200,000,000* Kwhr

Per Cent Change From Previous Year

	Total US	New Eng.	Mid. Atlan.	Cent. Ind.	West Cent.	South-east	South Cent.	Rocky Mount.	Pacific NW	Pacific SW
April 5	+6.9	*(Data on regional change not available at press time)*								
Mar. 29	+7.3	+4.4	+7.2	+5.8	+7.4	+11.9	+18.7	+6.6	+6.5	−2.9
Mar. 22	+7.4	+5.3	+6.8	+4.6	+7.5	+10.0	+18.2	+7.3	+6.9	+5.5

Electric Power Statistics

		Latest Month	Preceding Month	Year Ago
Peak Load (Million Kw)	Jan.	69.0*	70.5	63.4
Capacity (Million Kw)	Feb.	75.99	75.97	69.42
Production (Billion Kwhr)	Feb.	31.54	34.20	28.22
Hydro		9.46	9.90	8.21
Fuel		22.07	24.30	20.01
Fuel Consumption				
Coal (Million Tons)	Jan.	9.87	9.60	9.62
Oil (Million Barrels)		6.07	6.29	6.42
Gas (Billion Cu Ft)		52.27	52.72	43.58
Sales (Billion Kwhr)	Jan.	29.72	28.44	27.24
Residential		8.87	7.95	7.82
Commercial		4.99	4.77	4.57
Industrial		13.90	13.74	12.96
Other		1.95	1.97	1.87
Net Income Class A & B Utilities ($ Million)	Jan.	86.59	100.82	75.82
Estimated Dec. 52 Peak (Million Kw)	Dec.	81.1	80.7	75.3
Kwhr per Residential Customer (12 Month Average)	Dec.	2,004	1,988	1,830
Revenue per Kwhr Residential Service (12 Month Average)	Dec.	2.81¢	2.82¢	2.88¢
Canadian Production (Billion Kwhr)	Jan.	5.27	5.11	4.79

Business Statistics

FRB Industrial Production Index†††	Feb.	215*	215	217
Gross National Product Annual Rate ($ Billion)	4th Qtr.	333.0	327.6	303.7
E. W. S Industry Production Index	Feb.	124.8	124.4	119.7
ENR Construction Cost Index††	Mar.	115.4	115.1	112.8
BLS Consumer's Price Index	Jan.	189.1	189.1	181.5
NEMA Insulation Materials, Sales Index†	Dec.	466	511	564
NEMA Electric Appliance Sales Index†	Dec.	218	269	364
NEMA Household Refrig. Sales Index†	Dec.	115	87	219

* Estimated † 1936 = 100 †† 1949 = 100 ††† 1937-39 = 100 (Unadjusted)

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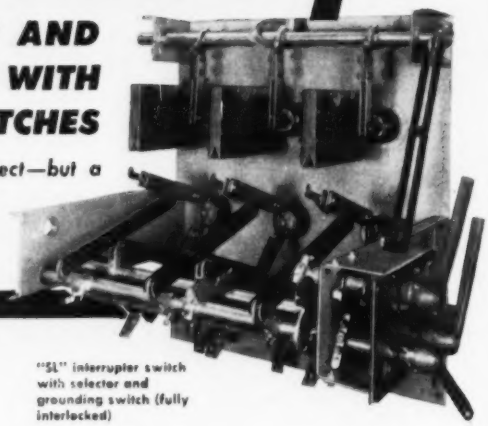
GREATER FLEXIBILITY AND LOW COST PROTECTION WITH "SL" INTERRUPTER SWITCHES

Not just an interrupter—not just a disconnect—but a combination that breaks loads safely—and when equipped with power fuses you get full system protection.



"SL" interrupter switch with selector and grounding switch (fully interlocked)

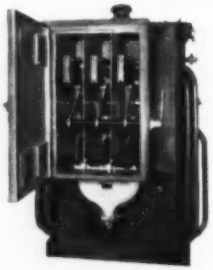
When specifications call for opening of circuits under moderate load you will find Delta-Star type "SL" interrupter switches will meet the requirements perfectly. Used with power fuses, they provide an economical means of fault protection.

Units are available in voltage ratings of 5, 7.5 and 15-kv. with interrupting capacities of 400, 200 and 100 amperes respectively. Continuous capacity of switches may be as desired since the main switch is independent of the interrupter. Furnished with or without metal housings in single, two or three pole units for mounting on transformers, walls or structures.

Load interruption is accomplished by momentarily shunting the full load current through a by-pass circuit. Here the arc is extinguished by rapidly elongating it within a confining chute. Danger of external arcing or contact burning is eliminated.

THERE IS AN "SL" INTERRUPTER SWITCH FOR EVERY APPLICATION

For complete information consult our nearest representative or ask for Publication 4612.

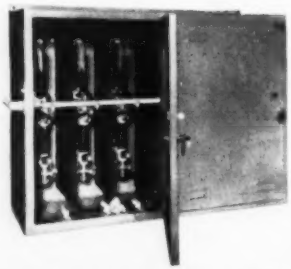


"SL" interrupter switch mounted directly on transformer

Terminators can be arranged on top or bottom of interrupter housing and furnished in several different arrangements for single feeder, looping circuits, etc. Units are easily operated by direct handle or hook-stick as preferred.

Heavy gage steel cabinets for both indoor and outdoor service

Large doors provide easy access to equipment for inspection and maintenance. Door handles on all indoor metal enclosed units are of the key type. Padlock clips are provided for locking handle in open or closed position.



Interrupter in combination with power fuses for fault protection

Each operating handle is equipped with a latch to prevent blade opening under short circuit currents. The latch is released by means of a trigger located on the operating handle and can be padlocked to prevent unauthorized operation.

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THE ELECTRICAL WEEK

Featured in This Issue

Mobilization agencies concerned with electric power will be coordinated by 3-man committee (p 7) . . . Equipment manufacturers say all they need is material to meet expansion program (p 8) . . . **California considers** buying Central Valley Project (p 9) . . .USBR line is backbone of New Mexico power pool (p 10) . . . **Unions** getting behind private companies in battle over public ownership (p 15) . . . Southern California Edison has professionals in its display department (p 16) . . . Kansas G & E's supervisors supervise their own conference program (p 22) . . . Will **France and England** interconnect? (p 33) . . . Farmers have money for electrification (p 50).

• • •

Latest From Washington—Boulder City, Nev., government-built-and-operated town near Hoover Dam, moved a step nearer self-government last week with appointment of a city manager . . . AEC has put a new reactor to work at its **Idaho Falls station** mainly for purpose of determining effect of intense radiation on materials considered for use in structures, heat transfer systems, and shields of new reactors . . . Utilities are invited by Depa to include **requests for materials** for previously deferred projects when fourth quarter, 1952, requirements are filed . . . Depa makes no promise that the enlarged requirements will be met, but says **utilities should take advantage** of "greater apparent availability of certain materials such as structural steel and aluminum" . . . **SEC has clarified its instructions** to holding companies for filling out Form U5S, on which companies make their annual reports . . . FPC has denied a **South Carolina Public Service Authority** application for a rehearing on order granting the authority only a small exemption for payment of annual charges under its FPC license . . . **U. S. Atomic Energy Commission** reports only 3.67 employees were injured in 1951 per million man-hours worked, 21.2% above 1950. No fatalities were due to radiation . . . House rejects two amendments by Representative Kennedy (Mass.) to restore a $1.1 million cut in appropriations for Army Engineers' survey of New England's water power resources . . . **Elbert C. Brown,** now assistant to the president of Hartford Electric Light, gets leave of absence to become power consultant for Depa at government request . . . Engine and Turbine Division of NPA appoints Clyde W. Organ (former Central Illinois Light vice president) to its staff.

From New England—Thermal efficiency of fuel burning plants of **PS of New Hampshire** in 1951 was 10,892 Btu per kwhr generated, against 19,016 in 1946. Best reported month's efficiency of new Schiller mercury-steam cycle station in 1951 was 9,168 Btu . . . "Socialism is oldest fraud in history," declared **H. W. Greenhalgh,** New England Power Service vice president, at an auditors' meeting in Boston. "James Watt, inventor of steam engine, and his successors in competitive struggle to make a better prime mover and sell it for less, did more to take women out of coal mines and children out of factories than all socialists, communists and politicians combined," he asserted.

From Middle Atlantic—Duquesne Light places in operation first unit of 95,000 kw at new Elrama station on the Monongahela River, four miles above Clairton, Pa.

From West North Central—Missouri P&L asks FPC to disclaim jurisdiction over transaction to acquire electric facilities of **Western L&T** or in alternative to authorize consolidation of the facilities.

From the Southeast—Madisonville (Ky.) City Council plans to erect and operate an **$850,000 light plant** (to be financed by revenue bonds) because of high rates charged by Kentucky Utilities, Mayor David Parish has revealed . . . At sixth annual convention of Tennessee Valley Public Power Association, Sam O'Neal of Washington, head of its Distributors Information Committee, said if consumers are to get a square deal some form of public power is necessary. Only a combination of public and private power programs could supply enough cheap electricity, he added.

Financial—South Penn Power asks FPC approval to merge Franklin Transmission into it. Potomac L&P asks FPC to merge Northern Virginia Power into it. The four companies are subsidiaries of Potomac Edison Co.

Litigation—U. S. Supreme Court begins hearing on case involving **Pennsylvania W&P** whose rate arrangements with Consolidated Gas EL&P of Baltimore are being challenged by FPC. If government wins it would mean a refund of more than $5 million to electric users in and around Baltimore and millions in reduced sales for the future, Philip B. Perlman of Baltimore, solicitor general, says. Ruling by court will be forthcoming shortly.

Legislation—N. Y. Governor Dewey approves **Horton Bill** which will require governing board of a municipality operating electric public utility service to establish depreciation reserve funds by appropriations from revenues of such service to be used for improvement, extension, or replacement of service or payment of debts.

Rates—Kansas G&E plans to ask Corporation Commission approval to increase rates about $1 million annually . . . **Gulf States Utilities** and City of Beaumont, Tex., reach a compromise to increase rates to net GSU a 6 1/3% return on its Texas investment. It was made at suggestion of City Council and was based on adjusted investment of GSU as found by Clinton Owsley, utilities rate expert, hired by city to analyze GSU 16.8% rate increase request. Although a rate schedule which will produce such a return has not been completed, Mayor Otho Plummer says he understands overall increase will be about 15%.

Congratulations—Salem (Mass.) Electric Lighting, Gloucester (Mass.) Electric and Beverly (Mass.) G&E appoint **H. Sherman Holcomb** vice president . . . Worcester County Electric elects **Ralph E. Secord** vice president . . . Maryland Utilities Association elects **G. Whittier Spaulding** (Pennsylvania W&P president) second vice president.

THE ELECTRICAL WEEK

CONTINUED

More from Washington—American P&L last week filed its plan with SEC for distribution of Washington WP stock. New plan is almost identical with one filed by American in early November (EW, Nov. 12, 1951, p 20). Main points of plan call for reclassification of WWP stock to make it conform in number to outstanding shares of American stock. All outstanding shares of Washington Irrigation & Development Co also will be assigned to WWP as a capital contribution from American.

Atlantic City Electric elects Charles M. Hagan executive vice president and the following vice presidents: Carl O. Carlson, John B. Taylor, and Waldo E. Caven.

Declaring that Pacific G&E faces no immediate emergency, California PUC denies company $17 million annual interim increase in electric rates pending final action of $37.8 million a year permanent hike.

REA has approved a contract between Alabama Electric Cooperative and Brown Boveri & Co, Ltd for purchase of two 7,500-kw generators at a cost of $472,500. Worthington Pump & Machinery was low domestic bidder with a tentative bid of $590,000 subject to increases which could bring the cost above $700,000.

IN THE INDUSTRY

The Atomic Energy Commission will construct its next big plant in the Ohio-Kentucky area. Just where AEC will neither confirm nor deny. But surveys have been made in at least three areas: Cincinnati-Newport, Louisville-Crestwood, and Ashland-Greenup. From two of these have come protests against such a plant. These two are Cincinnati and Louisville.

What Makes an AEC Plant Unpopular . . . Speaking for the Louisville objectors, Sen Thomas R. Underwood, Dem, Ky., presented these objections :

1. The proposed plant site is the only area into which the city can expand.

2. So many defense industries are locating there that labor is becoming scarce.

3. Property owners say the plant would lower values.

4. Grouping of the AEC plant with other defense industries would make Louisville an attractive A-bomb target.

5. Some people are afraid that the construction work would bring labor trouble such as that at Paducah to the city.

So far there have been no objections from the Ashland area. And among the Kentucky towns lobbying for the plant are Corbin, Hazard, and Russell Springs.

Electric Power Will Have a Big Part to Play . . . For the electric utility industry the interest in the new plant lies in its unprecedented, but still classified, demand for power. To supply this demand some power supplier, perhaps more than one, will have to build one or more huge plants. It is generally known that these are the three main potential power suppliers:

1. The same group of private utilities that formed Electric Energy, Inc, has made a proposal to AEC that it install almost 1 million kw of generating capacity adjacent to its Joppa, Ill., plant.

2. Another group of private companies in Pennsylvania, Ohio, and Indiana is expected to propose in the near future a similar generating company to finance an even more gigantic power development. This plan may be located in southern Ohio.

3. The Tennessee Valley Authority will undoubtedly share in supplying any AEC plant in its area.

AEC has announced that it is planning a $5-billion expansion program. If this is approved, the demand for electric energy will be almost beyond belief. But as to its plans for securing this vast amount of energy AEC isn't saying a word.

TECHNICAL NOTES

ARCHER E. KNOWLTON

Conductor overloads will raise the temperature of a connector joint and may cause annealing of the material unless the contact area is sufficiently large. Otherwise the connection will loosen.

Oil-filled and gas-filled high-pressure high voltage cable is almost equally divided between Detroit (56.7 miles), New York (63.9 miles), and Philadelphia (59.6 miles).

High-voltage oscillograph writing speed has been increased to ¾ the velocity of light by superposing a steeply rising voltage pulse on the steady voltage applied to the discharge tube of the oscillograph.

Megakilowatthour (Mkwh) is used abroad. Recent U. S. A. annual output of 200,000,000,000 kwh is 200,000 Mkwh. If "trega" could mean "billion" the figure would be 200 Tkwh. Simple.

Insulators on energized lines up to 120 kv between phases can be washed effectively and safely with water pressures of 100 to 200 psi and nozzles ½ to ¾ inch and a 35-ft washing distance.

Ionization of steam gives promise of preventing silica deposits on turbine blades. It results in the precipitation of the silica as a non-inherent dust.

Pole fires started by leakage current could be mitigated by periodic washing of the insulators to recover wet flashover merit and reduced leakage current.

Vaporization of water drops sprayed into an oil fire absorbs some of the heat that would otherwise distill off more oil vapor.

Flushing of water lines at frequent intervals is important for transformer fire protection installations. Silt, scale sediment, and even fish collect in ideal pipes.

Sulfur hexafluoride shows promise as a gas under 30-50 psi to improve the dielectric strength and self-cooling of dry-type transformers.

Power Expansion to Be Coordinated

DPA committee created to see that industry gets the materials it needs

A three-man, top-level committee has been set up within the mobilization agencies to coordinate the electric power expansion program.

At its initial meeting April 9, the group was to discuss its objectives and its working routine. Created by Defense Production Administration, the committee is charged with seeing that the electric industry gets the materials it needs to carry out its approved expansion program.

CHAIRMAN James F. Fairman, left, and NPA Deputy Franz Stone, right, will serve on power expansion coordinating committee with A. J. Corey, DPA construction division director

Fairman Is Chairman . . . Defense Electric Power Administrator James F. Fairman, a Consolidated Edison Co vice president, will act as chairman of the coordinating committee. Franz Stone, deputy adminstrator of National Production Authority, has also been named to serve. He was formerly head of NPA's Bureau of Industrial and Agricultural Equipment, under which are the claimant agencies for electric equipment manufacturers.

Third member is Albert J. Carey, director of the Construction Division, Office of Program and Requirements, DPA. It is DPA which slices the materials pie for all industry expansion. One reason for Carey's appointment was to give him a better chance to assess the material needs of the power program.

In general, establishment of the committee follows the recommendation of the Maybank Committee that an office of electric power be created (EW, Jan. 21, p 10). While the move does not center the responsibility for electric power expansion in one agency, it does center it in three men representing the agencies responsible for meeting the three-year, 32 million-kw goal.

Compromise . . . Evidently DPA considered the recommendation of the Joint (Maybank) Committee on Defense Production as a Congressional directive, and set up the committee as the politically practical compromise.

Certainly the three members of the Electric Power Committee have sufficient authority to iron out some of the problems that have beset power expansion. At least the members can decide who can solve the problems, if they cannot together decide how they should be solved.

Also the committee idea does offer a way of exerting coordinated pressure toward solving problems that a single agency could not solve independently.

Policy Makers . . . As presently contemplated, the three members will act as a policy-making group. If regular meetings are scheduled, it is believed they will be of short duration and deal with policy matters only. Because of the demands made on the members by their regular duties, they cannot well afford to give a great deal of time to committee work.

It is understood the committee will have no staff. Instead, the members will make use of existing staffs in their respective agencies to do whatever committee tasks are needed.

While the work of the committee may not be immediately apparent to electric utilities, it could have an immediate effect on the work of the mobilization agencies. Men in the lower ranks of the three agencies directly concerned will be keeping a close watch in hopes some problems will be met and solved.

From time to time the committee will make progress reports to DPA.

Gears Plants to Power Supply

Defense Production Administration has moved to coordinate new industrial plant construction with electric power supply. This will be accomplished merely by giving Defense Electric Power Administration a voice in passing on industrial construction applications submitted to National Production Authority.

For the applicant, it will mean little more work than at present. Information required to determine power needs will be submitted on CMP form 4-C, which is now being amended to include a power requirements section.

Main purpose of the new procedure is to avoid approval of large plants in areas where a sufficient power supply cannot be made available in time for scheduled operation of the plant. In critical areas, where a large portion of the available power is now going for defense needs, the rapid addition of more plants could make for power shortages.

Should Depa find that the proposed location of an industrial plant is one where there is a power shortage which might cause competition for electric power with existing or proposed defense or Atomic Energy Commission installations, it may recommend turn-down of the plant.

However, it was emphasized that electric power supply will be only one of several factors to be considered in approving construction of large industrial plants.

CMP Metals for Power Agencies:

Metal	3rd Quarter Allotment	3rd Quarter Request	2nd Quarter Revised Allotment
Defense Electric Power Administration			
Steel (tons)	296,025	302,936	338,360
Copper (lb)	62,250,000	75,602,000	62,008,000
Aluminum (lb)	61,300,000	65,338,000	61,312,000
Electrical Equipment Division of NPA			
Steel (tons)	594,650	723,369	583,047
Copper (lb)	168,200,000	200,774,000	158,770,000
Aluminum (lb)	34,000,000	40,953,000	29,831,000
Engine and Turbine Division of NPA			
Steel (tons)	583,000	735,261	557,163
Copper (lb)	31,823,000	38,343,000	29,695,000
Aluminum (lb)	3,405,000	3,603,000	3,082,000

Equipment for Expansion . . .

. . . of power capacity by 32 million kw in next three years promised by manufacturers—if they get more material

"Give us the material, and we'll turn out enough equipment."

This, in effect, was electrical equipment manufacturers' answer to the plea of defense mobilizers for enough machinery to carry out the 32 million-kw power expansion program over the next three years.

The 32 million-kw goal set up by Defense Production Administration a week earlier means the manufacturers will have to ship equipment in 1953 at twice the 1951 figure.

Want Bigger Allotments . . . At a special conference between National Production Authority officials and representatives of the manufacturers, the manufacturers asked only for increased material allotments.

They felt their present facilities plus planned expansions would be sufficient to handle the production.

But the NPA officials were less optimistic about the manufacturers ability to keep up with power expansion schedules. These officials noted that some manufacturers are not now able to keep up with order-board schedules.

Bottlenecks . . . Principal bottlenecks in equipment production were said to be heavy steam turbines, high-voltage switchgear and transformers, together with shortages in square and rectangular copper wire. Heavy castings also are in short supply on account of military demands, particularly for tanks, and heavy aluminum presses for airplane manufacture.

Officials of both the Electrical Equipment and Engine and Turbine Divisions of NPA were well pleased with controlled material allotments for the third quarter—especially as they affect the electric power expansion program. For both divisions, all third quarter allotments were above those for second quarter (see table).

Both divisions got virtually 100% of their requests for materials to be used directly for electric power production and distribution. The requests cuts shown in the table reflect reductions made in the non-power items for which the two divisions are claimants.

In an attempt to ease the castings and forging situation, NPA is undertaking a worldwide survey with a view to increasing production of these items.

Manufacturers were left pretty much in the dark as to what orders to expect from two vastly important non-utility customers—the Atomic Energy Commission and the Navy.

AEC Expansion a Factor . . . If Congress approves a huge AEC expansion program, as it will be asked to do, the equipment requirements could throw the utility power expansion program badly out of line.

Officials at NPA were not able to supply much data on the future needs for these programs. Whether the manufacturers will be able to absorb huge demands from these two programs can not be determined until their extent is known.

Utilities Warned to Keep Inventories Within Limits

Electric utilities have been warned to watch their inventories of controlled materials for minor requirements lest they violate CMP regulations.

In a recent industry letter, Defense Electric Power Administrator James F. Fairman said recent reports received by his agency "indicate that some utilities have inventories in excess of permissible amounts and have continued to accumulate materials over and above such excess inventories."

He did not say how widespread the practice is, but he did say that the National Production Authority Compliance Division has received the same information.

Depa's minor requirement quotas issued to utilities are to be used only to the extent that inventory restrictions will permit, Fairman emphasized. Inventory limitations affecting electric utilities are set forth in Section 45 of Order M-50. These limitations are on an item-by-item basis, he pointed out.

The inventory limitation section is being amended by Depa to read as follows:

"No electric utility shall place delivery orders or accept delivery of any item of controlled material or other material if its inventory of such items is, or by receipt of such material would become, in excess of a permissible inventory."

Utility Gets the Bird(s)

Thousands of starlings dealt a triple blow to Columbus & Southern Ohio Electric Co's system recently and left one million of its customers in the dark for an hour and a half.

The birds roosted en masse on the utility's 69-kv substation at Picway Plant, Lockbourne, causing a bus failure. The line had to be opened manually since automatic devices were damaged in a fire at the plant last June 22 (EW, July 16, 1951, p 95).

The delay in taking off the circuit caused voltages to drop at the Poston Plant, Columbus, and the Walnut Plant, Groveport, resulting in the loss of auxiliaries at these plants. The failure cut off service to twenty-three south-central Ohio counties.

California May Purchase CVP

Legislature sets aside $10 million for a down payment to the federal government in case state decides to buy

The State of California has taken two definite steps which eventually may lead to state acquisition of the Center Valley Project from the federal government.

Both houses of the legislature agreed to earmark $10 million as a down payment in case a decision to buy the water and power project is reached.

Submits Report . . . A few days earlier, State Engineer A. D. Edmonston submitted a report to the Water Project Authority of California that state ownership is financially feasible.

This agency, Edmonston reported, has the authority to issue revenue bonds for the purchase of the CVP—no additional state legislation would be necessary. However, Congress would have to approve the transaction.

At California's request the federal government started work on the CVP some 15 years ago. The systems of dams, power plants, canals, and transmission lines are entirely within California stretching from Shasta Dam on the north to the end of the Friant-Kern Canal near Bakersfield 300 miles away.

The Bureau of Reclamation supervised an expenditure of $385 million on initial features of the CVP and proposed eventually to expand the project into a $2-billion enterprise.

Enforcement Difficulties . . . Difficulties developed over enforcement of the reclamation law's 160-acre water limitation provision, water rights, and power distribution.

State ownership proponents argue these problems would be solved easier without government interference.

At a recent meeting in Sacramento to discuss a proposal to transmit CVP power to Nevada, Richard L. Boke, Region II director for the Bureau of Reclamation pointed out that the Department of the Interior is on record as willing to withdraw from the CVP if the state would reimburse the federal government for funds already expended and assume responsibility for completion and operation of the project.

The Edmonston report, a 287-page document, outlines several different plans for issuing bonds to purchase the project from the federal government. Each proposes the issuance of bonds to be paid off in 50 years.

The plans assume the federal government will not require reimbursement for flood control, navigation, and salinity control benefits.

Golden Anniversaries

Three sections of the American Institute of Electrical Engineers—those at Ithaca, N. Y., Minnesota, and Pittsburgh, Pa. — are celebrating the golden anniversary of their establishment this year. Except for the Chicago Section, which was organized nine years after the institute was established in 1884, the three are the oldest AIEE sections.

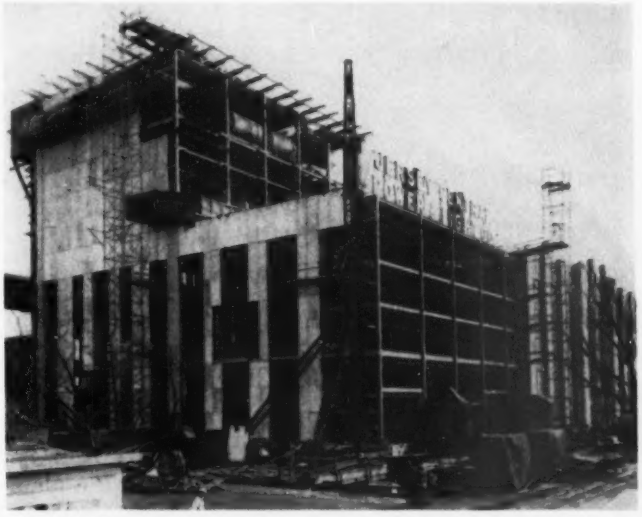
Detroit Edison, Ontario Agree on Interconnection

Detroit Edison Co and the Ontario Hydro-Electric Commission have reached an agreement for the exchange of electricity. Negotiations are now in progress to secure approval of the governments of the United States and Canada, which is necessary before the interconnection can be made.

Prentiss M. Brown, chairman of the board of Detroit Edison, said that engineering problems involved in the interconnection already have been worked out.

He explained that the exchange of power would tend to balance the peaks of demand upon the Canadian system which depends largely on hydroelectric power and upon the Detroit Edison system which drives its generators with coal-fueled steam turbines.

"The result," he said, "would be a lessening of the necessity for large expenditures on reserve generating equipment."

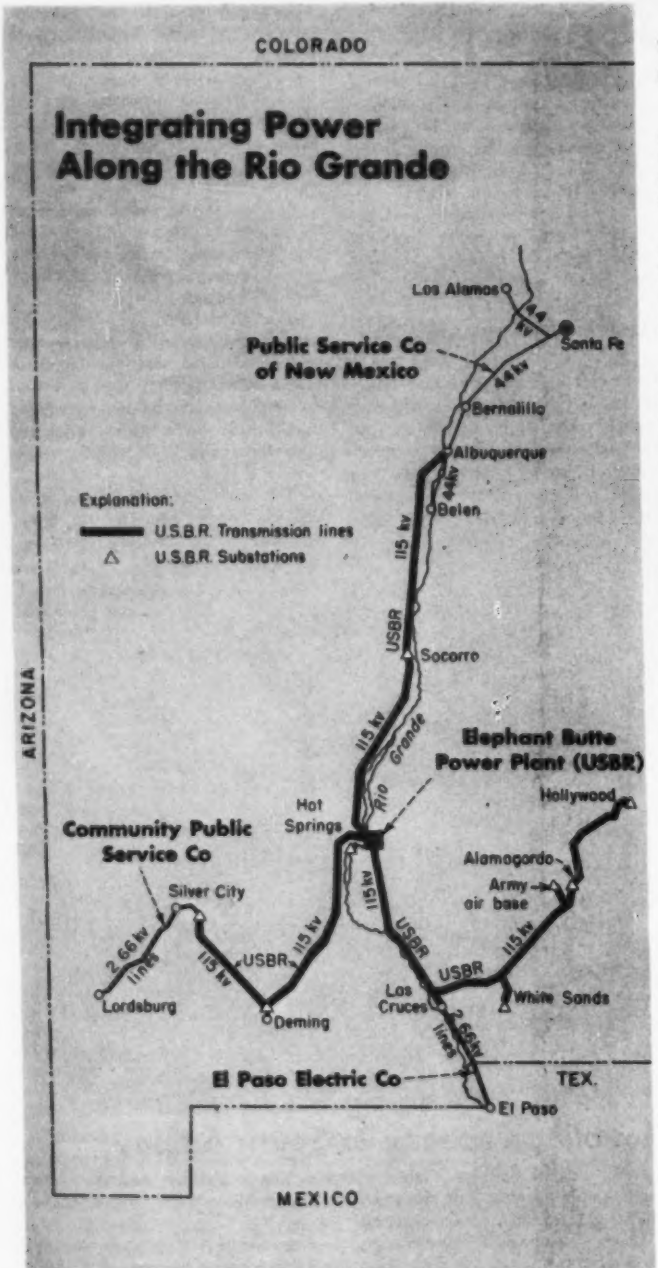


Doubling Capacity at South Amboy

Jersey Central Power & Light Co expects this $12-million addition to its South Amboy plant to start producing electricity early in 1953. The addition will house a 62,500-kw turbo-generator.

The new unit will double the capacity of the South Amboy plant, one of the company's three major power plants, and will increase the system's capacity by one-third. The South Amboy plant was badly damaged in May 1950 as a result of the explosion of munitions-laden barges at a nearby pier (EW. May 29, 1950, p 12).

New Mexico Pool Fills Gap for USBR



CONTRACT between Reclamation Bureau and El Paso Electric Co will help New Mexico pool. Only USBR generation comes from three 9,000 kva hydro units at Elephant Butte

Reclamation concludes pact with El Paso Electric for power to serve Rio Grande Valley

Bureau of Reclamation will draw on the New Mexico power pool, formed early this winter, to meet the demands of its customers in the Rio Grande valley.

USBR has concluded a contract to take a minimum of 50 million kwhr annually from El Paso Electric Co. The bureau will take up to 20,000 kw for a flat charge of 5¼ mills, subject to fuel escalation.

Pact Fills Need . . . The contract follows several abnormally dry years which reduced runoff and storage at Reclamation's Elephant Butte plant to the point where last fall it was almost wholly dependent on outside sources to serve its Rio Grande valley customers. Even with a record runoff in prospect this spring, the bureau still needs the energy base offered by the El Paso contract.

The New Mexico pool now comprises the Albuquerque-Santa Fe and Deming systems of Public Service Co of New Mexico, the Silver City-Lordsburg and Alamagordo-Ruidoso systems of Community Public Service Co, the Rio Grande power system of USBR, the Las Cruces division of El Paso Electric and several small municipals and REA-financed co-ops. Combined peak load in the first winter of operation was 146,355 kw.

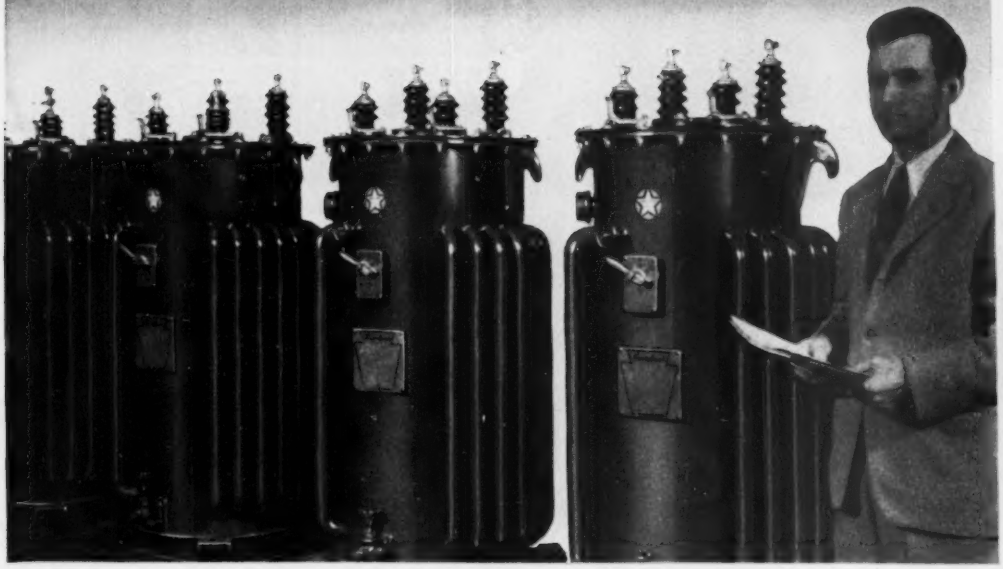
Delivers Power . . . Major function of the pool to date has been transmission of energy purchased by Reclamation from El Paso Electric. The bureau delivers up to 15,000 kw to Public Service at Albuquerque and uses any excess for its own customers.

Backbone of the pool is a 115-kv USBR transmission line from Las Cruces 230 miles north to Albuquerque. El Paso Electric has two 66-kv lines bringing power 44 miles north from El Paso to Las Cruces. Public Service is tied in to the north end of the line just outside of Albuquerque, and carries power 65 miles north to Santa Fe and Los Alamos at 44 kv.

A 115-kv line west from Elephant Butte and one east from Las Cruces complete the major transmission net.

"We've extended the POLE STAR line through 500 kva to give you better Distribution Transformers at no extra cost"

says Herbert W. Dornbush
Distribution Design Engineer
Pennsylvania Transformer Company



Pole Star Transformers now available in the following NEW sizes:

"The Pole Star Distribution Transformer is a better transformer than the stacked core transformer it replaces."

There is proof of this statement in the Pole Star's outstanding record of operation which dates back to 1946. That was the year Pennsylvania Transformer Company introduced the Pole Star transformer in sizes up to 25 Kva. When, three years later, the Pole Star line was extended through 100 Kva, that fine operating record was maintained. As a matter of fact, it was improved because Pole Star advantages such as low core loss and low exciting current are more significant in the larger Kva ratings.

Now, the line has been extended through 500 Kva.

Fundamentally, the new Pole Stars are the same as the 3 to 100 Kva Pole Stars. Cores are wound of oriented electrical steel with the laminations individually lapped. The new Pole Stars are smaller in size and lighter in weight than the stacked core transformers they replace. They are easier to install and more economical to operate.

You'll want to know more about the 167 to 500 Kva Pole Stars. For complete information, write to Pennsylvania Transformer Company, Box 330, Canonsburg, Pa. Ask for Catalog No. 352.

167 KVA

250 KVA

333 KVA

500 KVA

NOW **- Pole Star Transformers are available in all standard sizes from 3 kva to 500 kva**

Voltages up to 44 KV

Let the POLE STAR be your guide

Pennsylvania **TRANSFORMER COMPANY**

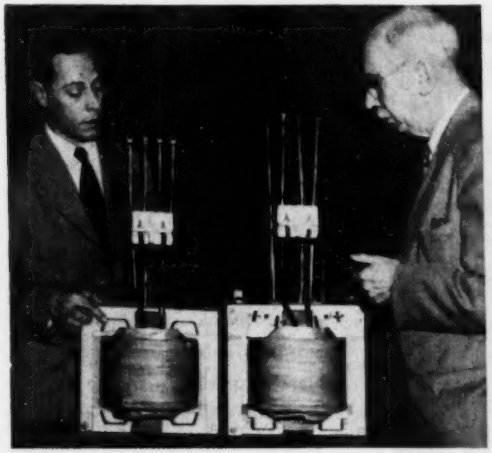
CANONSBURG, PA. *Greater Pittsburgh District*

Product Of Long Experience — Safe Thrifty And Reliable

Now...new design makes G-E pole-type

LESS WEIGHT ON POLE. C. E. Sutton, Jr., Manager of Distribution Transformer Sales, points out material which will *not* have to be hung on pole, thanks to new design.

transformers even lighter, stronger



STRONGER, THOUGH LIGHTER INTERIORS result from improved clamping structures and coil supports. N. M. Case, Section Engineer, and E. D. Treanor, Manager Distribution Transformer Engineering, examine simple two-channel clamp with welded cross braces which replaces four-angle structure with bolted cross braces on unit at right.

WHAT FOUR WEIGHT REDUCTIONS HAVE MEANT. Unit on left is a pre-Spirakore distribution transformer. It weighs 505 pounds. It has an over-all height of 39 inches. Projected floor space is 21 by 22 inches. Comparable Spirakore* unit on right weighs 335 pounds. Its over-all height is 35 inches. Projected floor space is 18½ by 20¾ inches.

Low losses retained — regulation improved — as Spirakore* transformer design chalks up fourth weight reduction

General Electric has again made important improvements in the quality of its core steel and its processing methods, permitting the redesign of most of its pole-type distribution transformers. The resulting copper savings are enough to build seven transformers where we could previously build only six.

Substantial weight reduction. The new units retain the low losses and high thermal capacity to take overloads, characteristic of previous designs. They also offer lower impedances, resulting in improved regulation. Physically, they're stronger than previous designs. Yet, they weigh substantially less:

AVERAGE REDUCTION IN MATERIALS WITH THE NEW DESIGN
(5000 volts and below)

- **10% reduction in total weight**
- **16% reduction in copper**
- **9% reduction in oil**
- **3% reduction in steel**

On a 2400-volt, 37½-kva unit the weight reduction amounts to 100 pounds. This means enough copper is saved to build a new-design 5-kva unit and enough oil for a new-design 10-kva unit.

Greater Short-circuit Strength. In the new design, clamping structures and coil supports have been simplified. . . strengthened. Support structures stay tight throughout treatment and life of the transformer. Tight coil supports prevent slippage between high- and low-voltage coils—increase short-circuit strength materially.

Continued leadership. The new design represents another of the many improvements that have helped maintain Spirakore transformer leadership since 1937. High impulse strength, Nitrile rubber gasket sealing, and long-life Melaglyp paint finish are some of the reasons why Spirakore transformers give extra years of service.

For complete information on these units write for GEA-4885, *General Electric Co., Schenectady 5, N. Y.*

*Registered trade-mark of the General Electric Co.

Spirakore transformers give extra years of service.

402-118

GENERAL ELECTRIC

It's now more than 20 years since Lapp engineers decided that a Post design would provide notably better high-voltage performance than the conventional spreading-shell type of unit—*if* it could be built.

Lapp has a long record—both before the introduction of the Line Post and since—of meeting that particular *"IF"* challenge. And, too, of carrying through. Because, even after turning out a few satisfactory samples, it's obviously quite a different thing to produce such pieces in successful long production runs.

Why should this porcelain be difficult? Why is it that ceramic engineers marvel at the sight of thousands of these pieces moving through routine production in the Lapp plant?

Well, first, it's a big piece of porcelain. Weighing 52 pounds, it's more than twice as heavy as any other piece of porcelain in the conventional line of pin-type, pin switch, or suspension insulators. And difficulty of ceramic production always increases disproportionately to weight, size, and thickness of section.

More than that, the Lapp idea of extra operating security demands quality and reliability of a high order. For instance, every Line Post porcelain is inverted on a grounded table and subjected to a vigorous 60-cycle flashover test with voltage carried on a chain dropped to the bottom of the open hole. The Post head that survives this test is sound indeed.

So many Lapp Line Posts have served so many years with such an outstanding low-replacement record that it seems like an old story now. But we still like to remind purchasers of electrical equipment—and insulators—that such porcelain provides an extra margin of operating security . . . of low upkeep and maintenance . . . to any system on which the porcelain is marked LAPP.

Lapp Insulator Co., Inc., Le Roy, N. Y.

Lapp.

Unions Fight Public Power Ownership

Opposition of electrical workers unions to the further expansion of public power "might well be a turning point in American politics."

This opinion was recently expressed on the House floor by a Congressman who sought to reduce further the funds which the federal government is spending on its power empire.

Among the public power leaders, too, there is a growing awareness that the opposition of electrical unions to new public projects is having a telling effect. So effective have the unions been in this fight against public power that they are now being wooed by the public power advocates.

Peace with Unions . . . At the annual meeting of the National Rural Electric Cooperative Association in Chicago last month, the co-op lobby group was asked again and again to make peace with the unions. As a step in this direction, it invited a pro-labor Congressman to speak at one panel discussion. It so happened that this lawmaker hailed from Chicago, where the 600,000 members of the Chicago Federation of Labor have voted to repeal the section of their constitution advocating public ownership of utilities.

IBEW Chief Dan Tracy and half million members . . .

At this meeting, Rural Electrification Administrator Claude Wickard noted the opposition of the unions to REA-financed generation and transmission projects, but said the co-ops should adopt the prevailing wage policy urged by the unions. "I am sure you have much more to gain by such action than you have to lose."

And in an unscheduled appearance at this Chicago meeting, former Congressman Andrew J. Biemiller, who is now a labor advisor for the Interior Department, also urged that co-ops make every effort to meet the union wage scales.

Private vs Public Ownership . . . But these government officials have not reckoned with the deep-seated convictions of the electrical workers' unions against public power. Wages are important, but their workers have far more at stake than wages. And the unions are aware of it, as this statement by the International Brotherhood of Electrical Workers shows:

"Labor does not choose to have its welfare determined by the administrative orders of government officials, no matter how well intentioned they may purport to be."

Under the statesman-like leadership of Daniel W. Tracy, IBEW president, this union is now building up a record in slowing the encroachment of public power. Tracy's union, comprising more than half a million workers, represents more than 75% of the unionized workers in the power industry.

Just as active in this fight is the Utility Workers Union of America, CIO, under the able direction of Joseph A. Fisher. Numbering some 80,000 members, the UWU has made its voice heard in many a debate over the threat of public power.

While directing their own battle against public power, both Tracy and Fisher are also attempting to win more support in the national labor organizations with which their unions are affiliated. American Federation of Labor, of which IBEW is an affiliate, and Congress of Industrial Organization, of which UWU is an affiliate, are both on record for public power. Time and again, these large parent organizations take stands on projects directly in conflict with the electrical workers unions.

More Support . . . But over the long pull, the electrical worker unions hope to gain stronger support from the other segments of labor.

Tracy has done yeomanlike work with the executive committee of the AFL in showing the leaders the adverse effect of public ownership on free labor.

Fisher has been fighting an uphill battle within CIO to convince the top leaders of that organization that labor loses when government takes over.

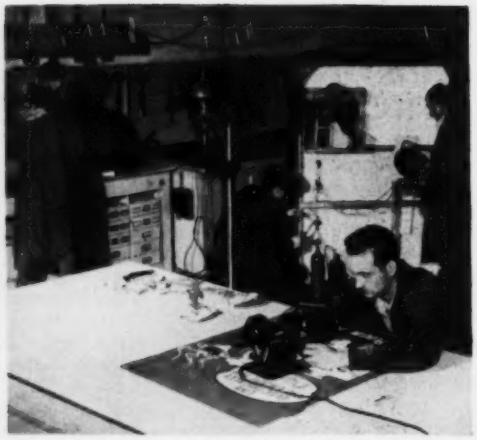
CIO President Phillip Murray has appointed a committee to appraise the arguments put forward by UWU, and see what action should be taken.

. . . side with UWUA President Fisher to fight public power

Neither Tracy or Fisher are making this fight against public power for the benefit of the power companies or their management. It is recognized both by the companies and the labor leaders that differences on labor policy have and will continue to exist between them. The unions are battling for the interests of organized labor in the light and power industry.

But private ownership of power facilities is a field in which both the employer and the employee have a common interest. Public ownership, they feel, threatens interests of both.

DISPLAY DIRECTOR Ray Fischer halts work on a new poster to discuss changes in Edison's annual report cover with Artist Wayne Watson



DISPLAY WORKSHOP, now in Alhambra, Cal., started out in 100 sq ft of floor space in Southern California Edison's Central Appliance Store

You've Got to Catch Them on the Fly

'SHORTY' HUNTER (the one on the right) is a long-time member of the department

Color, light, and motion.

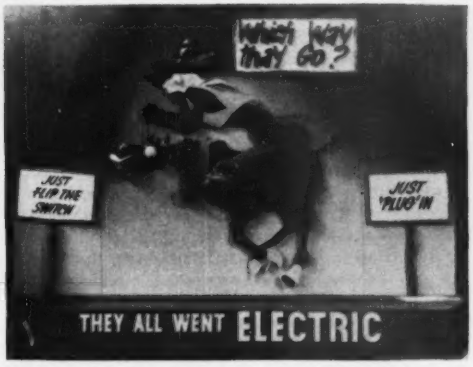
These are Ray Fischer's by-words in running Southern California Edison's display department in highly professional fashion. Fischer has been called "a combination of creative artist, astute business head, and experienced display man with a touch of Rube Goldberg inventiveness." He believes a bright, animated setup is worth a good deal more than 10,000 words.

"In ancient crowded market places," Fischer says, "merchants polished and arranged their wares to make a picture more attractive and salable; in other words, a still-life display.

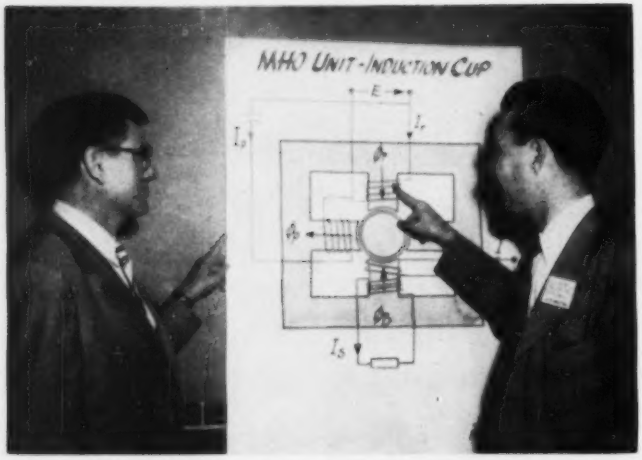
"Today in our modern, fast-moving, streamlined world, displays must be of the same nature. Unless a display is an 'attention getter' or has 'punch,' it is a waste of time and material."

In constructing his "attention getters," Fischer has his ten-man staff concentrate on his three by-words within the frame of another two: simplicity and composition. Since he organized the department at Alhambra 16 years ago his staff has carried the idea through 16,400 displays. They have to be rugged as well as attractive—the "packaged" units rotate through 50 company offices as silent salesmen of light and power.

SUMNER HOLLAND started the company's display department with Fischer in 1936. He specializes in installation, and is an expert at setting up "accordion-type" displays. These are "elastic" pieces designed to fit various sizes of office windows around the company



ROCKING BOAT and galloping horse provide the motion, other parts of the displays the light and color, in these products of the department



WIRING DIAGRAM holds attention of Marion J. Smith, Texas Technological College (left) and John R. Wilson, General Electric Co, at annual conference of Protective Relay Engineers

Relay Problems Discussed

Engineers exchange ideas at annual conference sponsored by Agricultural & Mining College of Texas

Many relay problems were discussed at the recent fifth annual conference for protective relay engineers sponsored by Agricultural & Mining College of Texas, College Station.

E. D. Scarth, Texas Electric Service Co, in discussing how his firm gets a very high quality of circuit breaker performance said that (1) breakers are tripped once a week to be sure they are operating properly, (2) they are overhauled once a year, (3) grease has been changed to a type not affected by age and temperature, (4) breaker operators are cleaned and overhauled and Doble tests are made periodically, and (5) time-travel recorders are used to guide breaker maintenance.

System Described . . . A three terminal pilot wire relaying system, which has just been installed by Omaha Public Power District, was described by Ralph W. Shaw. The system was designed for a temporary connection between two 69-kv circuits one of which was equipped with pilot wire relaying and the other with impedance type distance relays.

J. P. Barron, Dallas Power & Light Co, said the most simple, straightforward scheme of relaying that can be devised to do the job is the best. Undue complication invites error and high maintenance costs.

In discussing back-up protection, J. M. Reynolds, Houston Lighting & Power Co, said his company had not found it feasible to provide infallible back up protection for all possible emergencies, but has instead attempted to weigh the probabilities of device failures against the consequences for failure to provide 100% back up.

Charles L. Wilie, Texas Power & Light Co, said the three-step, definite time directional distance type relay is used almost exclusively for protection of high voltage lines on Texas P&L system.

Pilot wire relaying on an 11-kv loop was described by Harold Robinson of the City of Austin, Tex. Reasons for selecting this scheme were high speed simultaneous tripping of breakers at both ends of lines, short lines were not suited to distance relaying, the scheme provides out of step blocking, and simplicity of the installation.

Minimizing Outages . . . Installation of automatic generator voltage regulators, measures to avoid unstable generator operation, installation of a 5-Mw steam-driven generator for emergency station service, improvement of communication systems, provision of means to isolate plants and other measures were provided after loss of the entire system load of the City Public Service Board of San Antonio. Studies made and measures taken were described in a paper by R. M. Jolly and J. B. Poston of City Public Service Board.

Maryland Group Hears Business Rise Forecast

Military spending will rise from $3.5 billion to $5 billion a month in about a year, Clark R. Pace of "Business Week" told Maryland Utilities Association at Baltimore, Md., April 4.

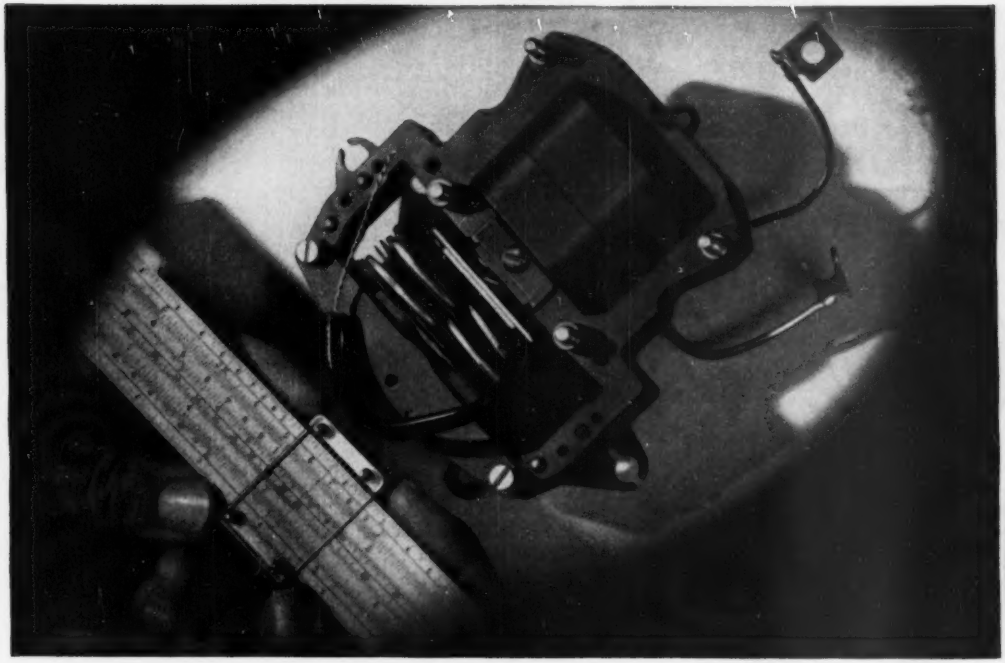
Pace said he doubts if a slowdown will come in business spending at end of the year, seasonal factors aside. Rate of inventory change will be a minor factor until last quarter when it may turn up, he added.

As to the consumer, he looks for more spending and less saving from mid-summer on. The reason: Consumers over-bought a year ago and have been over-saving since.

"In spite of a slowdown of military spending," Pace said, "the vigor of over-all economy and highrate of plant expansion has been enough to hold us on a high plateau. Further rise in military spending plus small increase in consumer spending seems to assure an over-all increase in business activity before the year is out."

In discussing "The Impact of Economic Trends on Public Utility Regulation," Prof. Herbert B. Dorau of New York University said that for survival for enterprise ownership, utility common stock must be made attractive and compete with other stocks.

Wheeler McMillen, editor-in-chief of "Pathfinder" and "Farm Journal", speaking on "The Federals are Coming," gave three points for continuation of private enterprise: (1) Review the Constitution and Declaration of Independence; (2) invest a comparable time to talk and influence someone, particularly voters of tomorrow; and (3) conduct your business so employee and customer will know that it is being run in a fair way and by individual enterprise.



Sangamo J Meters

designed for maximum stability

Sangamo Type J Watthour Meters have a factual record of sustained high accuracy. This high accuracy is no accident. Important electrical and mechanical features have been combined with skilled manufacturing techniques and the latest statistical quality control methods in order to embody the desired quality characteristics into these meters.

With maximum stability as the principal design goal, liberally designed potential and current elements combine to insure accurate registration from the lightest loads to loads well over four times the nominal current rating.

The exceptionally high driving power of the Sangamo J Meter is another important factor in assuring its stable registration. There is ample torque in the moving system so that at light loads increases in friction rarely affect registration.

Only Measured Facts are Known Facts

SANGAMO
ELECTRIC COMPANY
SPRINGFIELD, ILLINOIS

Sangamo J Meters have proved their ability to meet today's requirements and tomorrow's anticipated loads with sustained accuracy, economy of maintenance and troublefree performance.

SM52-4

From Northern Canada to the Tropics

Kyle OCR's are OK

They give you dependable operation in any kind of weather

▼ Ambient temperatures are no problem to Kyle® Oil Circuit Reclosers. They are as dependable at extremely low temperatures as at normal temperatures. Installation records show that thousands of Kyle reclosers are regularly operating at extreme temperatures all over the world.

Here's just one example: One of the large users of Kyle reclosers is a power company in Northern Canada. Here the long clear summer days get pretty hot. And on long winter nights the mercury may drop down to 50 below.

In winter, deep snowdrifts block roads for weeks at a time. A blown fuse could mean a long blackout. But with Kyle reclosers, there are a minimum of power interruptions. Performance is excellent the year around. Customers have less trouble, and Kyle reclosers don't seem to know whether it's hot or cold, judging by their unfailing, prompt, accurate operation.

Kyle reclosers lick weather problems. Eliminate service trips over ice and snowdrifts. Cut outages to a minimum. Save money on fuse link replacements. Assure accurate coordination. Ask the L-M Field Engineer for details on L-M—Kyle complete automatic protection. Or write for a copy of Bulletin CR1 to Line Material Co., Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

Kyle oil-filled equipment is now supplied with ORTO®, L-M's oxidation resistant transformer oil, inhibited to lengthen oil life.

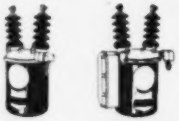
Kyle type H single-phase recloser, with all the Kyle safety features. Seven operating sequences.

Kyle type 3H — operates individually on each phase but locks out all three phases simultaneously.

Kyle type L Heavy Duty — only recloser with 4 operating curves, interrupts up to 6000 amperes.

Kyle type E recloser, with all the Kyle features. It is engineered especially for 23kv systems.

Kyle type GS sectionalizer makes protection completely automatic—coordinates with all reclosers.



Kyle oil switches for many applications. Manually operated type G, or remote control type GR (right) for capacitor and other remote control switching.

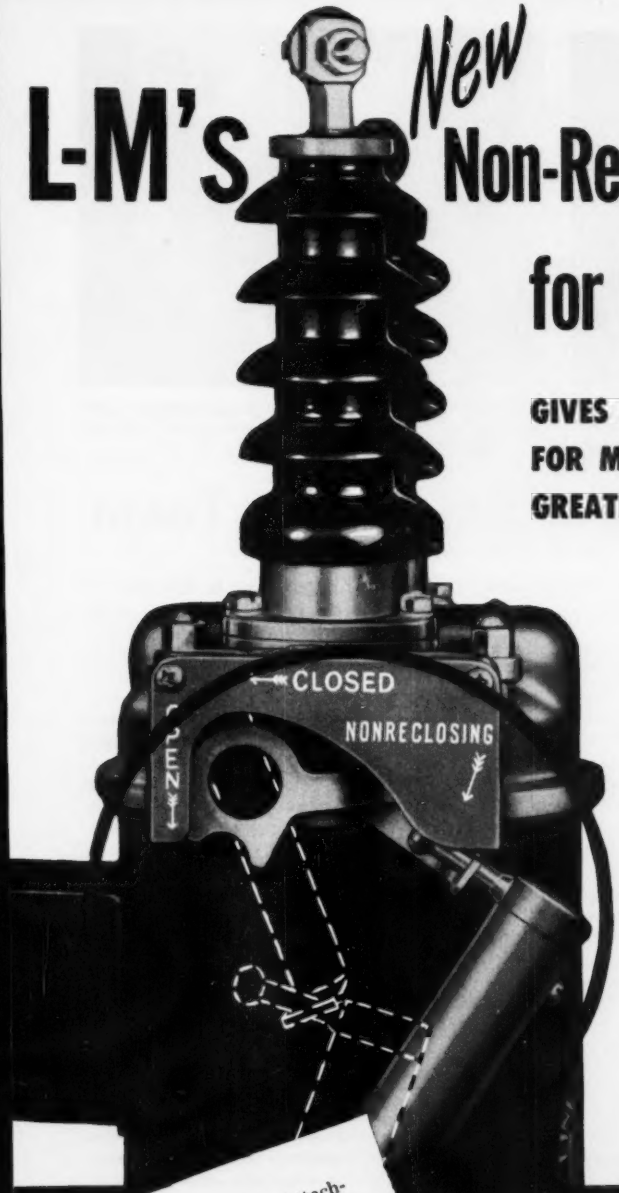
66

LM

LINE MATERIAL... Kyle Reclosers

L-M's *New* Non-Reclosing Attachment for Kyle® Reclosers

GIVES GREATER SAFETY FOR MEN AND EQUIPMENT... GREATER SAFETY IN HOT LINE WORK



L-M's new Non-Reclosing Attachment provides lockout of the recloser on the first fast operation. Should an accidental contact or arc occur while men are working on the line, the recloser opens instantly and stays open, instead of continuing through the usual complete four-operation sequence.

This new attachment provides the same protection out on the line that has been available only on substation breakers. It permits hot line work with far greater safety to men and equipment. The attachment is available at a small extra cost on all Kyle reclosers.

For complete information ask the L-M Field Engineer or write Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

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The Non-Reclosing Attachment lever is under the sleet hood next to the regular reset handle. Pulling down the lever puts the attachment into operation but *does not* open the line. When work is completed the lever is pushed back up—and the recloser will then operate normally.

LINE MATERIAL

SUPERVISORS at Kansas Gas & Electric hold an informal conference led by industrial relations director, to discuss ideas and problems

VICE PRESIDENTS Barr and Evans and Industrial Relations Director Montague (l to r) review films and other material used in program

Supervisors Make Management Team

Training and information program inaugurated in 1947 by Kansas Gas & Electric Co today is paying off in greater efficiency. Foremen take an active part in discussing their problems and bringing up new ideas on company policy at regular conferences

Inviting supervisors to sit around a conference table to discuss their problems and air new ideas has paid off in efficiency and cooperation for Kansas Gas & Electric Co.

The utility's supervisory personnel have been given a place on the management team. Because of this, the company feels, they are better equipped to do their jobs and as a result take a keener interest in the utility's affairs.

Making the supervisors feel they are part of management was one of the main objectives when the training and information program was authorized by Kansas G&E's president, Murray F. Gill, in October 1947. Named to act as a steering committee to guide the program were Frank Barr, vice president; Gordon W. Evans, vice president and general manager; and Glen Montague, director of industrial relations.

Help Shape Program . . . The supervisors themselves had a hand in determining what form the program should take. At the initial meetings they decided the best way to proceed was through the conference method. It was decided they would attend monthly conferences on company time.

Some of the men were skeptical at first about the new program, felt that it was a new method of dishing out the "company line." They adopted a wait-and-see attitude. Gradually hard-boiled supervisors became convinced the company was sincere in wanting to know what they thought would help business and their suggestions for improving efficiency. They began to loosen up and brought up for discussion ideas which they had accumulated in years of service. Some of the ideas started hot discussions—many were put into practice by the company.

Objectives . . . The supervisors set their own objectives. They looked to the conferences to develop their supervisory abilities, give them a broader viewpoint of their responsibilities and opportunities for leadership, and provide an opportunity to acquire information of immediate use in their day-to-day supervision. Another goal they set up for themselves was to re-emphasize the need for a sincere, impartial, and human approach to the feelings and welfare of individual employees.

From the suggestions offered by the supervisors, the steering committee selected a number of subjects to be discussed in conference. Among these were supervisory fundamentals, self analysis, policy manual, handling of people, selection and training of understudies, and day-by-day supervision on how to get the job done.

Lessons in Economics . . . But the conferences have a broader scope than a discussion of supervisory problems. Each year the company's annual report is given a thorough going-over. The supervisors get a chance to discuss the fundamentals of the nation's economic system and public utility economics. The company, its place in the community, and ways to increase the utility's business also are considered.

After three years of conferences, the supervisors answered an anonymous questionnaire about the program. Ninety-six percent thought the program had helped them. Among the comments was this one: "The conferences have made me feel the company thinks my job as supervisor is important."

Another supervisor said, "I have learned a lot about supervision by discussing problems and ideas with other supervisors and finding out how they would handle them."

Many ideas brought out at meet-

ings were put into operation. Among them were the publication of "News Digest for Supervisors," containing facts and no editorials, and "Everybody's Business," an information sheet on government, business, and civic affairs.

Another result of the conferences was that executives and supervisors got better acquainted, making it easier for management to find employees best qualified for promotion. The supervisors got to know and understand each other better, making possible greater cooperation among them.

Promoting Business . . . Out of the conferences came several ideas to promote new business for the utility. One of these was to make prospect cards available to employees for use in notifying the company's sales department of possible purchasers of electrical equipment.

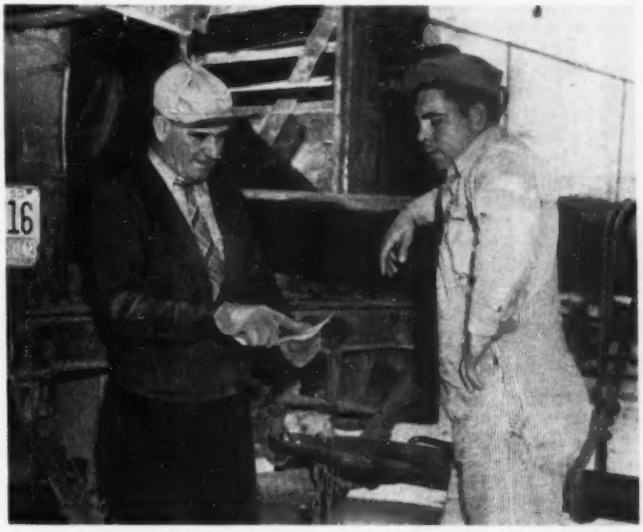
Another called for the distribution of pocket rate cards to employees so they could answer any questions put to them on rates accurately and intelligently.

Another accomplishment of the program was the revision of the policy manual. The manual is now being kept up to date to clarify any questions which have been brought up in the conferences.

Conference discussions have been summarized and put into notebook form. The notebooks are available to new or prospective supervisors so they too may derive benefit from the training sessions. The new or prospective supervisor studies the material under the guidance of his own immediate supervisor, in order to get the most out of it.

But the effect of the conferences was not confined to supervisors and management. Employees shared in the benefits. Supervisors decided they were responsible for orienting new employees and drew up a check list to make certain they did a good job of it.

ACTIVE PARTICIPANT in supervisory program is Kansas G&E's president, Murray F. Gill (left). Here he checks with C. E. Middleton, transportation superintendent, on program results



LINE FOREMAN Frank Wilkinson (left) talks over work plans with a member of his crew, putting into practice some of principles of supervision discussed over the conference table

More Conferences . . . The special training supervisors received in conference leadership enabled them to conduct conferences within their own departments.

A girl, leaving the company for reasons not related to her work, made this comment about her supervisor during her termination interview:

"My supervisor had always been efficient and business like, and he tried to be fair in dealing with me and other employees. We respected him but did not like to work for him. But after he attended those supervisors conferences for a couple of years, he was a lot different. We still had efficiency—even better I think—and there was a friendly atmosphere that made pleasant working conditions."

The incident is evidence of the effect of the program on both supervisors and the persons under their charge. It showed the objectives of the far-sighted supervisory training program at Kansas G&E were being accomplished.—**E. G. McKinney**

Raver to Address APPA Parley

BPA administrator will discuss "KW" conditions in the Northwest at American Public Power Association convention

Administrator Paul J. Raver of Bonneville Power Administration will address the ninth annual convention of the American Public Power Association, which will be held at the Olympic Hotel, Seattle, April 29-30 and May 1. He will speak on "How Many Kilowatts?"

Joint Meeting . . . The convention, which will be devoted to public power policy discussions and reports on the operation of electric utility systems, will be a joint meeting with the Northwestern Public Power Association which meets in Seattle April 28.

Among the spokesmen will be Washington's Gov Arthur B. Langlie, who will present his views on the Northwest power situation.

Depa Officials to Talk . . . Attention also will be focused on the nation's defense program when Administrator James F. Fairman of Defense Electric Power Administration speaks on "Electric Utilities and the Defense Mobilization Program." Depa's Clinton T. Hurd, chief of the Major Projects Control Branch, also will attend the convention as an official representative of the defense power agency.

"The Role of the Federal Power Commission Under Present Federal Power Policy" will be discussed by Willard Gatchell, assistant general counsel of the commission.

Reports on operating trends by leading officials from publicly owned systems throughout the nation will feature sessions arranged by various committees of the association.

"Sales Promotion Under Today's Conditions" will be considered by J. S. Smith, manager of the Advertising and Sales Promotion Division, General Electric Co. Another major subject slated for discussion will be the question of personnel policies.

Playing host for the convention will be Tacoma City Light and Seattle City Light, which is celebrating its 50th anniversary this year. Both systems will be viewed by convention visitors with a day-long trip to Seattle's famed Skagit hydroelectric project scheduled for May 2, the day following the three-day convention.

PCEA Will Consider Unit Costs, and Wiring

The joint spring conference of the Pacific Coast Electrical Association's Administrative Services Section and the Customer and General Accounting Section of the Pacific Coast Gas Association will be held April 17-18 at the Hollywood Roosevelt Hotel, Los Angeles. The sessions will include discussions on development of unit costs and manpower standards.

R. C. McFadden, vice president, Southern California Edison Co. will discuss the value of adequate wiring to the industry at the Business Development Section's annual conference, which is slated for April 24-25 at Huntington Hotel, Pasadena.

PEA Groups to Discuss New Equipment, Carrier

Pennsylvania Electric Association's Meter Committee will hold a meeting at the Yorketowne Hotel, York, Pa., April 17-18 and has planned a round table discussion on new equipment.

The Communications Committee, slated to meet May 1-2 at the Americus Hotel, Allentown, Pa., will discuss a report on carrier current usage in Pennsylvania and neighboring areas.

RMEL Conference Set

The present situation in the electrical industry in the Rocky Mountain area will receive attention at the Rocky Mountain Electrical League Conference to be held April 21-22 at the Shirley Savoy Hotel, Denver, Colo. The topic will be discussed by J. W. Cryder, president of RMEL and president and general manager of Colorado Central Power Co.

CALENDAR

American Institute of Electrical Engineers
Southwest District Meeting, Jefferson Hotel, St. Louis, Mo., April 15-17; Welding Conference, Rackham Memorial Bldg., Detroit, Mich., April 16-18; arranged jointly by American Welding Society, Detroit Section, and Industrial Electrical Engineers Society, Detroit; Northeastern District Meeting, Arlington Hotel, Binghamton, N. Y., April 30-May 2; Summer General Meeting, Hotel Nicollet, Minneapolis, Minn., June 23-27.

Pacific Coast Electrical Association
Administrative Services Section Conference, Hollywood-Roosevelt Hotel, Los Angeles, Calif., April 17-18; Business Development Section Conference, Hotel Huntington, Pasadena, Calif., April 24-25.

Pennsylvania Electric Association
Spring Meeting, Meter Committee, Hotel Yorktowne, York, Pa., April 17-18; Communications Committee, Americus Hotel, Allentown, Pa., May 1-2; Spring Meeting, Relay Committee, Lawrence Hotel, Erie, Pa., May 8-9; Electrical Equipment Committee, Hotel Roosevelt, Pittsburgh, Pa., May 15-16; Spring Meeting, Systems Operation Committee, Allenberry Lodge, Boiling Springs, Pa., May 22-23; Spring Meeting, Transmission-Distribution Committee, Iron Temple Country Club, Dallas, Pa., May 22-23; Spring Meeting, Prime Movers Committee, Tidewater Inn, Easton, Md., May 28-29.

Illuminating Engineering Society
Southern Regional Conference, Hermitage Hotel, Nashville, Tenn., April 20-22; Canadian National Conference, Hotel General Brock, Niagara Falls, Ontario, Can., April 30-May 2; Great Lakes Regional Conference, Hotel Statler, Cleveland, Ohio, May 5-6; East Central Regional Conference, Webster Hall Hotel, Pittsburgh, Pa., May 22-23; Northeastern Regional Conference, Hotel Preston, Swampscott, Mass., June 19-20.

Rocky Mountain Electrical League
Spring Conference, Shirley Savoy Hotel, Denver, Colo., April 21-22.

American Wood-Preservers' Association
Annual Meeting, Hotel New Yorker, New York, April 21.

Southeastern Electric Exchange
Annual Conference, Boca Raton Hotel, Boca Raton, Fla., April 21-23.

American Public Power Association
Spring Convention, Hotel Olympic, Seattle, April 29-May 1. Joint Meeting with Northwestern Public Association, April 28.

Edison Electric Institute
Electrical Equipment-Prime Movers Committee, Edgewater Beach Hotel, Chicago, May 5-6; Association of Edison Illuminating Companies Meter-Service Committee, Edgewater Beach Hotel, Chicago, May 5-7; Transmission-Distribution Committee, Edgewater Beach Hotel, Chicago, May 6-7; Hydraulic Power Committee, Edgewater Beach Hotel, Chicago, May 6-7; Purchasing Stores Committee, Roosevelt Hotel, New Orleans, La., May 11-14; Accident Prevention Committee, Indianapolis Athletic Club, Indianapolis, Ind., May 22-23.

National Electrical Manufacturers Association
4th International Lighting Exposition-Conference, Industrial-Commercial Lighting Equipment Section, Cleveland Auditorium, Cleveland, May 6-9.

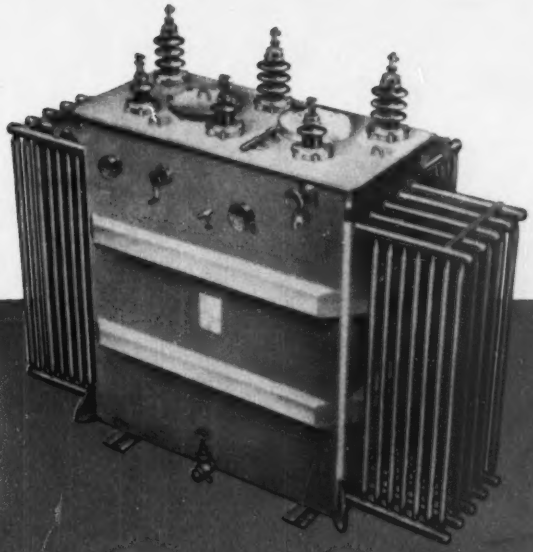
Northwest Electric Light & Power Association
Engineering-Operation Section, Rainbow Hotel, Great Falls, Mont., May 7-9; Business Development Section, Chinook Hotel, Yakima, Wash., May 12-14; Personnel Section, Vancouver Hotel, Vancouver, B. C., May 19-21; Accounting-Business Practice Section, Medford Hotel, Medford, Ore., May 22-23.

Public Utilities Advertising Association
Annual Convention, Hotel Radisson, Minneapolis, Minn., May 8-9.

Interstate Power Club
Hotel Martinique, New York, May 12.

Nashville Electric Service
1952 Electric Show, Electric Center Bldg., Nashville, Tenn., May 12-17; co-sponsored by Nashville Electrical Dealers Association.

New Jersey Utilities Association
Spring Conference, Seaview Country Club, Absecon, N. J., May 16.



SAVE WITH Power Transformers THAT COMBINE ASA STANDARDS

...AND Westinghouse Quality!

For the first time, the industry has agreed on Standards for power transformers. Westinghouse is ready *now* to supply transformers that meet these Standards.

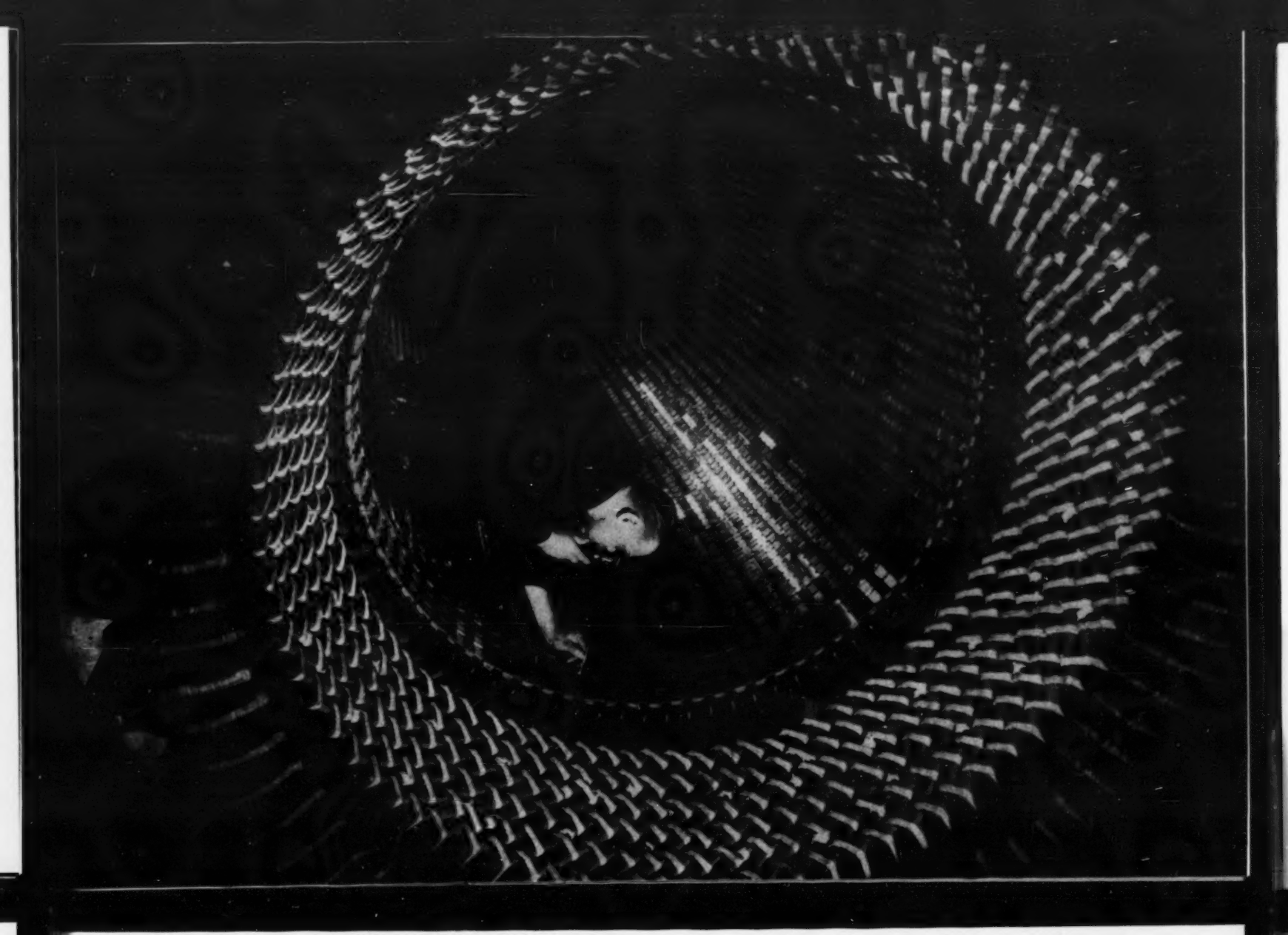
There are substantial savings when you use Westinghouse *standardized* design transformers.

1. A *minimum* reduction of 8% in capital investment.
2. Superior quality that insures reliability of service and a minimum of operating expense.

Your Westinghouse representative will be glad to discuss the application of *standardized* transformers to your system. Call him today, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-70617

YOU CAN BE SURE... IF IT'S Westinghouse

POWER TRANSFORMERS



Meeting the Nation's Growing Power Load

Lower Capital Costs through Higher kw Ratings

Your continuing search for better electrical service at reduced cost is the mainspring for our research and development activity. Take generation for example. As long ago as 1929, Westinghouse began pioneering on the large 3,600-rpm turbine-generator. This long-range program was based on our belief that higher-rated, high-speed machines would some day be needed.

Today, this long-range thinking stands justified. Many utilities have reached the stage where they must use units of 100,000-kw ratings and larger.

The Westinghouse 3,600-rpm turbine-generator with ratings up to 250,000 kw takes on added economic significance in view of today's rising costs. With higher-rated units of this kind, the over-all cost per kilowatthour can be reduced. The savings are reflected not only in apparatus cost, but in building and foundation costs as well.

Whether it's generating, transforming, regulating, protecting, measuring . . . any or all of the complex scope of utility service, Westinghouse is constantly thinking ahead about all your problems. How high ratings will go in the future is unknown . . . what we do know is that America's power appetite is growing. With this realization goes our responsibility to build more efficient apparatus . . . that is economical and reliable. J-97161

YOU CAN BE SURE... IF IT'S

Westinghouse

200,000-kw ratings are here

Philadelphia Electric Company has ordered from Westinghouse the largest single-shaft, high-speed turbine-generator unit ever undertaken; delivery is scheduled for 1954. This 3,600-rpm, triple-exhaust turbine is rated at 200,000 kw. The generator, using Westinghouse-pioneered, inner-cooled conductors, is rated at 235,294 kva. The generator will operate at 30-pound hydrogen pressure normal rating and will be good for 10% increased capability with 45-pound hydrogen pressure. Other higher-rated turbines are on order.

25-inch blades

The new 3,600-rpm turbine design was made possible largely by the use of Westinghouse-pioneered 25-inch blades. This is one of the most important of all Westinghouse contributions to higher-rated machines and higher steam temperatures and pressures; because the factor that determines the economic rating of any turbine is the size of the exhaust annulus, or the length of the last-stage turbine blade. The advance from blade lengths of 20 inches in 1935 to 25 inches today, represents one of the great triumphs of Westinghouse engineering.

Inner-cooled rotors

For large 3,600-rpm generators, Westinghouse has developed hollow rotor coils cooled by direct contact with hydrogen. Such coils will make it possible to increase ratings by as much as one half. Units larger than 200,000 kw are possible, while still maintaining industry-accepted short-circuit ratios and sufficiently high rotating mass for system stability.

Related generator developments kept pace

Generator developments matched turbine progress to make the new, large, 3,600-rpm, turbine-generator possible. For instance, there's the slotted rotor design, which eliminates double-frequency vibration; and flexibly-mounted stator assemblies to isolate the 120-cycle frequency vibration from the generator foundation. Another important advance is the development of Thermalastic® insulation for armature windings.

To learn what these developments mean to you, call your Westinghouse Electric Utility representative . . . or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

This Veteran of Two Wars
Has Made O-B the Logical
CHOICE OF
INSULATORS
You may remember—there was also a metal shortage during World War I. This accounts for the wood bottoms and steel tops of these towers, erected in 1918, and still so satisfactory there has been no good reason to rebuild the line. Equally satisfactory is the O-B insulation, installed 32 years ago, and providing just as reliable protection as the day it was originally put up.
Insulator performance of this character has accounted for many other transmission lines, subsequently built by this southern property, to be O-B equipped. Such reliability, proved out on the user's own terms, has made O-B the logical CHOICE OF INSULATORS.
Ohio Brass
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NEWS ABOUT PEOPLE

Pennsylvania P&L Names . . .

. . . A. D. Root vice president, financial. Utility appoints Palmer secretary. Markley, Fortune, and Flood are advanced

A. D. Root, vice president and treasurer of Pennsylvania Power & Light Co, has been appointed vice president, financial. Other changes in the financial department included the appointment of Frank H. Markley, assistant treasurer, as treasurer and Robert R. Fortune to succeed Markley.

A. D. ROOT

Named Secretary . . . The company's new secretary is Everett L. Palmer, who will also retain his position as assistant to the president. Harold J. Flood, chief of the stockholders section, was made assistant secretary.

Root joined PP&L in 1945. Prior to that time, he was associated for more than 25 years with Ebasco Services, Inc, and its predecessors in a financial consulting capacity for utility companies.

Palmer started with PP&L in 1923 as the first member of the company's student training course. In 1925 he entered the general commercial department, where he assisted in various rate studies. Two years later he was promoted as assistant to the general commercial manager and in 1940 to manager of the rate and contract department. In 1946 he was made assistant to the operating manager and about a year later assistant to the president.

Veteran Employee . . . With PP&L for the past 27 years, Markley has served in various capacities in the utility's accounting department. He was made assistant treasurer in 1945 and has been in charge of the company's accounting for the last six years.

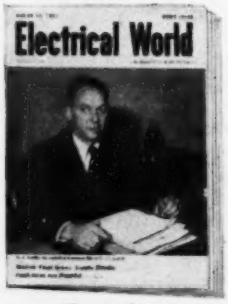
Fortune began with the company in 1948 as a member of the accounting division staff. Prior to that he had been accountant-in-charge for the firm of Haskins & Sells.

When Flood joined PP&L in 1946 he handled stockholder relations. Previously he had been active in similar work for a group of utilities.

Raymond S. Wood has been appointed general manager of Link-Belt Co's ball and roller bearing (Dodge) plant at Indianapolis to succeed **C. V. Loughery,** who has retired after 50 years' service at the company's Philadelphia and Indianapolis plants. Wood, who joined L-B in 1914, has been assistant general manager of the Dodge plant since 1950.

Thomas Sproule has been appointed manager of manufacturing of General Electric Co's Welding Department, Fitchburg, Mass. Sproule, assistant manager of manufacturing of GE's Turbine and Welding Divisions, Fitchburg, succeeds **William G. Arnold,** who was made works manager of the New Kensington, (Pa.) plant.

Knapp Is Head of Connecticut L&P



(Cover Story)

At 46 Sherman R. Knapp is the youngest president in the history of Connecticut Light & Power Co and at present is one of the youngest in the industry. He has succeeded Robert H. Knowlton who has replaced Charles L. Campbell as chairman of the board.

Knapp is well known throughout the industry. He has been one of the most active participants in the Electric Companies Public Information Program. Last September he was chairman of the PIP Workshop Conference at Chicago which was attended by over 300 industry executives and public relations men.

From 1943 to 1950 he was a member of the Edison Electric Institute Industrial Power and Heating Section. In 1946 he was chairman of the Interstate Power Club.

In his 24 years with the company the new president has had experience in the operating and sales departments, as a district manager, and on the executive staff. Following his graduation from Cornell, where he received the degree of bachelor of science in electrical engineering, he joined CL&P as a cadet engineer.

Knapp held various jobs in the operating and engineering departments until 1932 when he became assistant to the industrial power engineer. After a four-year period, starting in 1937, as New Milford district manager, he was made assistant to the sales vice president. In 1948 he became assistant to the president and in 1949 he was appointed executive vice president.

R. F. KRAUSE

Robert Krause Elected Head of New England PS

Robert F. Krause has been elected president of the New England Power Service Co, Boston, succeeding Edwin A. Dow, who becomes chairman of the board. For the last two years, Krause has been serving as assistant to the president of the parent company, New England Electric System.

The new president of New England PS is a member of the Massachusetts bar and has been an attorney in the corporate department of the company for several years. Previously he was an associate director of the public utilities division of the Securities and Exchange Commission. He was appointed to the commission in 1938.

Dow was employed in 1912 by the Power Construction Co on the Shelburne Falls (Mass.) hydroelectric developments of the New England Power system. In 1916 he joined the Southern Power Co, North Carolina, returning within a short time to the New England company. In 1936 he became chief engineer of the Service company and in 1941 was named vice president. Three years later he was made president of the New England utility.

G. South Dunn, public relations director of Appalachian Electric Power Co, has resigned to accept a position as assistant to the president of Curtis Lighting, Inc, Chicago. He has had charge of the utility's public relations program since 1948.

C. A. Haines, vice president in charge of operation of the Radio Tube and Picture Tube Division of Sylvania Products, Inc, has been appointed director of facilities planning for a newly created executive department which will be located at Salem, Mass. As head of the department, which was set up to supervise planning of plant expansion, Haines will direct plant specifications and construction, site selection, and long term planning of facilities location.

Robert M. Fichter has been appointed sales promotion manager of consumer products, a new post, for Westinghouse Electric Corp. Fichter, who joined Westinghouse in 1936, will be responsible for coordination and staff supervision of all consumer products sales promotion activities. Prior to the new appointment, he was major appliance advertising and sales training manager at appliance division headquarters at Mansfield, Ohio.

H. P. WHITEHEAD

Georgia Power Elevates Whitehead to New Post

H. P. Whitehead, Augusta Division superintendent of Georgia Power Co, has been named general superintendent of transmission and distribution for the utility. His successor is T. J. Stone, assistant Macon Division superintendent. Stone is replaced by T. R. Shockley, Austell district manager.

Whitehead joined Georgia Power in 1929 as equipment specialist and since that time has served as foreman of the general repair shop, general foreman, supervisor of special construction and assistant superintendent of the Atlanta Division. He was appointed Augusta Division superintendent in 1949.

Stone started with the company in 1929 as a test engineer and has served as assistant division superintendent at Columbus. He was named assistant division superintendent at Macon in 1946.

Shockley worked in the utility's appliance repair department before serving with the U. S. Army Signal Corps in Europe from 1941 to 1945. Since his return he has been a field engineer and was made Austell district manager in 1946.

Martin E. Gilwood has been made director of research for Permutit Co, New York. He has served the company as research engineer, assistant manager of research and manager of chemical research. He will be responsible for all operations of research, analytical and pilot plant laboratories at Birmingham, N. J. and market research activities.

OBITUARY

Dr L. W. Chubb

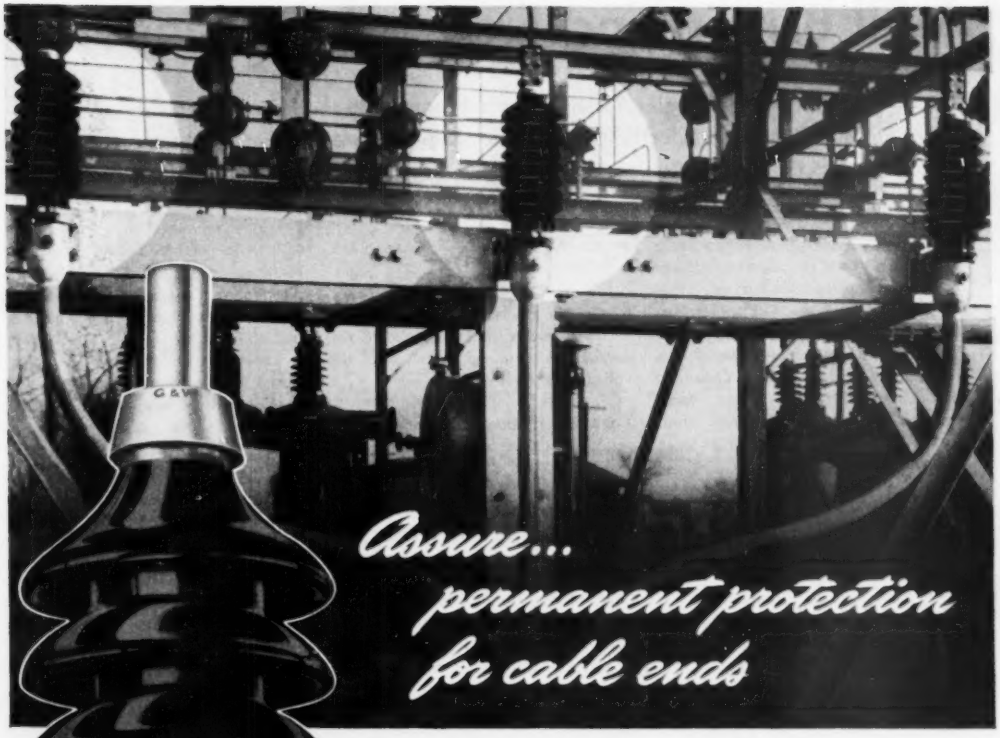
Dr Lewis Warrington Chubb, 69, director emeritus of the Westinghouse Electric Corp's Research Laboratories, died April 2 at Pittsburgh, Pa.

Dr Chubb joined Westinghouse in 1905 as an engineering apprentice, working in the research department. From 1920 to 1930 he was manager of the company's radio engineering department. In 1930 he was named director of research. He remained with Westinghouse until his retirement in 1948 except for six months in 1930 when he was assistant vice president in charge of engineering for Radio Corporation of America's Victor Division at Camden, N. J. He received the Lamme Medal in 1934 and the John Fritz Medal in 1946.

Dr Chubb was the holder of approximately 200 patents on a variety of inventions.

Francis Fargo Gregory, merchandising co-ordinator of A. O. Smith Corp, died March 8. He started with the company in 1944, serving first as sales promotion manager, then public relations director, and finally as merchandising co-ordinator.

Delmar C. Failor, 81, for many years chief engineer for the East Palestine, Ohio, municipal light plant, died March 22. He retired six years ago.



SOLDERED PORCELAIN
TYPE "ST" POTHEADS

These potheads are factory assembled, with metal-to-porcelain soldered joints. This method (exclusive with G & W) completely eliminates the possibility of future trouble due to loosely gasketed joints. When these potheads are used, the responsibility for properly sealed joints rests entirely with our factory. Troubles due to aging, cold flow and permanent set of gasket materials are eliminated.

Since their introduction in 1940, type "ST" Soldertite potheads have achieved an excellent service record on gas filled as well as standard cables. Many electric utilities companies have standardized the use of them.

Bulletin No. AA50 gives further information, data and prices.

Bulletin No. A52 explains the theory of stress cones and gives data on make-up as well as prices of material.

Write for your copies or ask your representative.

G & W ELECTRIC SPECIALTY CO.
7780 DANTE AVE., CHICAGO 19, ILL., U.S.A.
Cable terminating, connecting and sectionalizing devices
Representatives in principal cities of U. S. A. In Canada: Powerlite Devices, Ltd., Toronto and Montreal

Will Britain and France Interconnect?

Cable under English Channel would benefit both the British Electricity Authority and Electricite de France. Engineers are studying advantages of dc transmission, proper voltage, and problems of laying and splicing

J. H. M. **SYKES**, 67 Chaucer Road, Bedford, England

Some day a submarine power cable across the Straits of Dover may interconnect the power systems of Great Britain and France. For the British Electricity Authority and Electricite de France, both government owned, the day cannot come too soon. Technical discussions between them have reached an advanced stage. Both favor the interconnection for these reasons:

1. It would reduce the amount of reserve capacity needed.

2. Less plant would be needed to carry peaks.

3. More efficient loading would lower total production costs.

4. More efficient use of hydro and thermal facilities would result.

Spelled out in detail, here are the advantages to both systems. BEA, predominantly a thermal system, can offer EdF, predominantly a hydro system, power in summer when England's power demands and France's water supply both drop. In winter when British demand rises sharply because of domestic and industrial space heating, the French are in a position to export energy.

Savings in Money and Plant . . . The interconnection would also eliminate the need for a 200-Mw power plant in each country. Since each plant would cost close to $28 million, the saving would be considerable. And for Britain whose coal reserves are precious and limited, the tie-line would be a valuable contribution to its economy.

Diversity of peak times would contribute to the value of the interconnection. Most of the year there is a difference of one hour between the peaks in the two countries. As for the cost of power, the difference is so small that neither country stands to gain.

While both systems are agreed on the value and necessity for the tie-line, there is still some disagreement as to technical details. There is agreement that 400 Mw would be the minimum worthwhile interchange. The cable is to be 25 miles long. But should the current be ac or dc? What shall the voltage be?

Engineering Plans . . . Here is the thinking of the engineers of both systems:

The 132-kv British grid is to have superimposed on it a 275-kv super grid, spanning the whole country. The French 220-kv grid is planned, in part, for boosting to 380 kv (EW, March 31, p 18). The southern parts of the British super-grid are also designed with this voltage in mind. The voltage of the channel cable could be 132 kv in order to utilize existing cable techniques and so remove one unknown factor as regards submarine work. But 300 kv, ac, is attractive. Cables for 220 kv are developed and in use but have not been laid under water.

With an ac cable, charging current problems obtrude. A 220-kv, 3-phase, 50 c/s-cable would require 5,000 kva per circuit per mile. A 400-kv cable would require 15,000 kva per circuit per mile. Operating difficulties might be severe, and reactive kva compensating stations would have to be situated immediately on the cable ends.

Gas Pressure Cable Favored . . . Possible types of cable, all fully developed by British makers, are oil filled (experts say the pressure problems would be severe) and self-contained gas pressure. Opinion favors the latter.

Both systems are discussing a dc connection. Interest in Europe in high voltage dc is now intense. Swedish engineers have pioneered in this field with the 62½-mile line now under construction between the Island of Gotland and Sweden. This line will operate at 100 kv to earth, using a single conductor with sea return. Direct current at 200 kv to earth on each pole—400 kv between poles—is feasible. Four single core cables could be used as a single 3-phase, ac feeder with a spare core and later as two dc feeders.

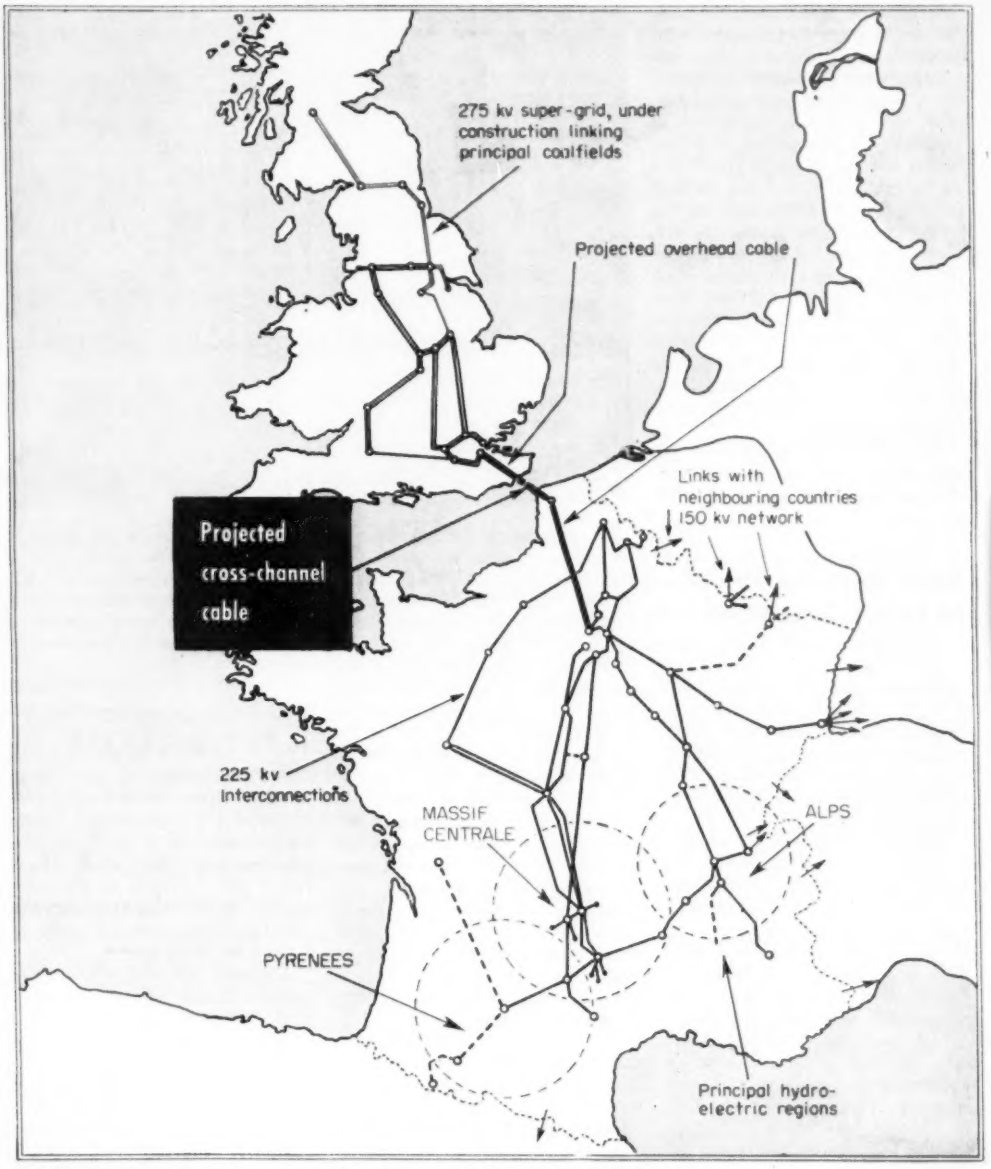
Vacuum tube research has progressed to a stage where only a final development of tube details is needed before practical designs can be evolved. Tube banks in series, with 100 kv across each tube and with a number of banks in parrallel, could be utilized for both converter and inverter. The link would be reversible.

Advantages of dc . . . The advantages of direct current are two conductors in place of three per circuit, greatly reduced insulation for a given voltage, operation of lines up to thermal limits as system stability is not a limiting factor, no reactive kva problems on the line itself, and possibility of fixed power flow setting which would obviate load swing and fault current difficulties.

The disadvantages of direct current are that as yet no circuit breaker is available, the relatively high cost of conversion equipment, and inexperience in operation of tubes at high voltages and currents.

One scheme now under consideration calls for a 50-mile, 2-circuit, dc overhead transmission line from the 132-kv (soon to be 275-kv) substation at Northfleet, Kent, in southern England, to the channel coast. There dc would be changed to ac and sent across two cables to France. Again the current would be rectified and sent over a 2-circuit line to a 220-kv substation in the Paris region.

Cables for a dc Line . . . For direct current the existing cable design could be worked to much higher stresses in kilovolts per centimetre than for alternating current. This would result in a reduced diameter for a given loading. A British firm is advocating a design of extruded polythene dielectric. For this cable it claims these advantages: complete homogeneity of



CROSS-CHANNEL CABLE would interconnect the systems of the British Electricity Authority and Electricite de France, both government owned

dielectric, including splicing sections; great flexibility; and no problems of compound migration. The Swedish dc-cable is of solid paper insulated. Some British makers favor cable of this type, and some of these cables have gas compression features.

Danish engineers, for the sea crossing between Denmark and Sweden, have evolved a flat-type, 132-kv, oil-filled cable with self-compensating features created by springy bronze diaphragms wired to the flat sides of the cable. This design would be suitable for dc use.

It is believed that the difficulties of laying a cable across the channel could be overcome. Cable ships and equipment are available. The channel bed can be studied in advance with the aid of echo sounders or by the recently developed undersea television.

Splicing a Problem . . . Splicing the channel cable remains one of the toughest problems to solve. It is likely that the manufacturers will find it

impossible to manufacture the cable in lengths longer than a quarter mile. (Okonite manufactured a 25-kv submarine cable 7½ miles long for the BPA Puget Sound-Lopez Island line, EW, June 4, 1951, p 83). A splice in a 220-kv, ac cable is over 10 ft long and is bulky and rigid.

Pre-splicing, before rolling on 40-ft floating drums such as used for the Pluto oil line cable during the war, may be possible if a flexible joint can be devised. Long cable lengths could be spliced at sea. Danish cable engineers have perfected techniques for such splicing jobs. But the channel is notorious for its choppy seas, sudden squalls, and fogs. Cable ship captains, however, say these grave difficulties could be overcome.

But so far no one in either unit has been able to answer one question: Will the politicians at London and Paris approve?

Power to Be Distributed by French Department

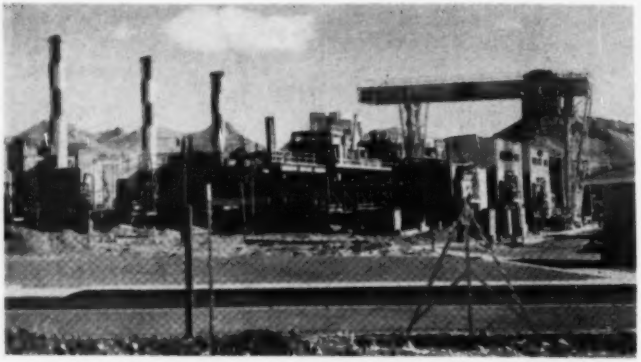
Paris (McGraw-Hill World News) —The Department of Vienne has withdrawn from the electric power network operated by Electricite de France and will now distribute electric power to the 247 communities of the department through the Vienne Electricity Syndicate a publicly owned departmental body.

Electricite de France will continue to supply all the electric power used in the department. Since prices for electricity are fixed by law, the principal result of the shift is that the Vienne Electricity Syndicate takes over from EdF the responsibility for operation and maintenance of the department's distribution network.

With the Vienne Electricity Syndicate, there now are five large power distribution organizations in France operating independently of EdF. In addition, there are a number of smaller independent distributors of electric power.

The law of April 8, 1946, which set up EdF as the big nationalized producer and distributor of electric power, specifically exempted publicly owned power companies from nationalization forced on all private producers and distributors of power.

Until now, however, EdF has operated the Vienne Snydicate's distribution network under a lease agreement.



OUTDOOR PLANT near Chihuahua, Mexico, is slated to begin operations in May when the first of two 15-Mw units goes on line. Chihuahua now gets its power from U. S. Navy mobile unit

To End Chihuahua Shortage

End of a severe power shortage in Chihuahua, Mexico, is in sight with first operation of a 15,000-kw unit in a new steam plant scheduled for sometime in May. The plant is being built by the Federal Comision de Electricidad (EW, March 17, p 16), and includes a second unit which should be completed sometime in 12-18 months.

Chihuahua presently is being served by the 10,000-kw U. S. Navy mobile power unit which was previously used in Mexico City. A succession of dry years on the hydro system which normally serves the city forced drastic curtailment until the mobile unit arrived last November. One boiler and a cooling tower in the new plant were rushed to completion to supply steam and cooling water for the mobile unit, which has been able to carry the entire load of the city.

Unit for Torreon . . . The new plant is on a site originally laid out for a refinery and its design contemplates three identical 15-Mw, oil-fired outdoor units. Foundations and most of the structural work have been completed for all three units, but only two will be completed under the present program. The third unit has been diverted to Torreon, another critically short area, and is expected to go into service about the same time as the first Chihuahua unit.

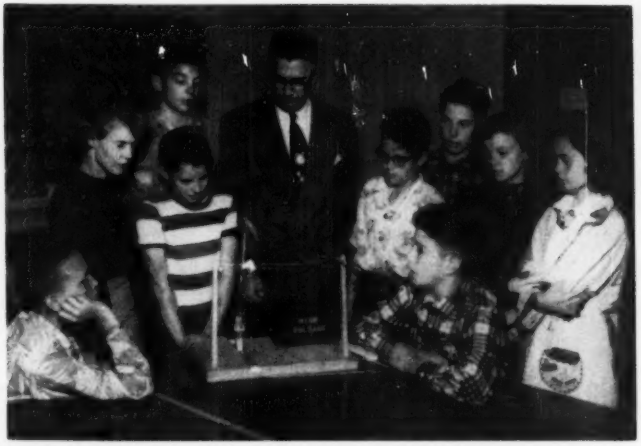
Layout and design of the outdoor plant follow U. S. practice generally. Small sheet metal houses with removable roofs serve as permanent enclosures for turbine and generator. Controls have been centralized in an elevated observation room which commands a view of the entire plant, and is connected by catwalks to the firing aisle and turbine-generator enclosure.

230-Kv Submarine Cable to Be Tested by BPA

A 230-kv submarine cable will be tested by Bonneville Power Administration shortly in preparation for the installation of a 24,000-ft oil-filled pipe-type cable under Puget Sound. About 800 ft of test cable will be made by Phelps-Dodge Copper Products Corp for delivery to BPA at Vancouver, Washington.

According to Phelps-Dodge, the proposed installation will consist of three 750,000-cir mils (three conductor) single-phase, paper-insulated cables with temporary lead sheaths. Arranged in a solidly grounded wye configuration, the cable will be under an oil pressure of 200 psi in a single continuous pipe. Proposed crossing will be about 4¾ miles long and will lie at depths exceeding 600 ft.

This cable will be an integral part of a 230-kv transmission line connecting BPA's Snohomish substation to a new substation near Bremerton, Wash., on the Olympic Peninsula. It will carry about 200,000 kw across Puget Sound. Installation is scheduled to begin in 1954 with completion by November of that year. Estimated total cost of the project is $6 million.



Kiddies Learn Dangers of Kite Flying

San Diego Gas & Electric Co is using a novel demonstrator to teach youngsters how a kite string coming in contact with a power line can injure or kill the person holding it. The demonstrator is part of a 50-minute demonstration on safety worked up by the company's Visual Education Department for presentation to 4-H groups. It has been so popular that city and county schools have requested it for their classes, and it has been presented at practically every school in the area.

The demonstrator uses a high-voltage neon sign transformer connected to one span of a power line. When a small doll representing the kite flyer is moved forward so that the wire which serves as the kite string comes close to the span. The high voltage leaps to the string creating a visible and audible spark. A piece of material within the body of the doll then bursts into flame giving evidence of the hazard of electric shock.

Niagara Mohawk Story Is Told in NAM Reel

The story of Niagara Mohawk Power Corp's role in transforming the energy of the water of Niagara River into electricity is told in "Industry on Parade," the National Association of Manufacturers' television weekly feature newsreel.

The Niagara story, which lasts about four minutes, is one of four narrations included in Reel No. 79.

Like a sight seeing guide, the newsreel takes the viewer on a tour of the operation, beginning at the falls and ending at the plant's control room. In the film several close-up shots show the huge equipment used in Niagara's Schoellkopf Plant. Although the big water wheels could not be filmed in action, a close-up of a spare was shown.

The film's aerial views provide a panoramic view of the world famous falls and the Schoellkopf Station. The station, built of rock, blends with its natural surroundings so as not to detract from the beauty of the falls.

The reel will be released nationally on or after April 20. For exact date of telecasting Reel No. 79, check stations in your area.

Wanted: A President

Toledo Edison Co is advertising for a president, several vice presidents, a secretary, a treasurer, and a number of other top management men. But the company isn't in as bad a shape as the ad might lead one to believe. If one continues reading, he will find that these positions will open up between now and 1970.

The ad was prepared for use on bulletin boards at universities where the company is seeking graduates.

'Finer Carolina' Contest Attracts 139 Entries

Entries in the "Finer Carolina" contest, sponsored by Carolina Power & Light Co, have reached 139 with a few last minute entries expected. Projects planned are both varied and ambitious; some involve heavy costs.

Among projects are the following:

Improvements to streets, highways, and sidewalks; water and sewer systems; parks, swimming pools, community and club buildings, and other recreational facilities; churches, schools, and college properties; health and medical facilities; and agricultural and industrial promotion. Three towns are seeking doctors, and three hope to install telephone exchanges.

Annual Report Highlights

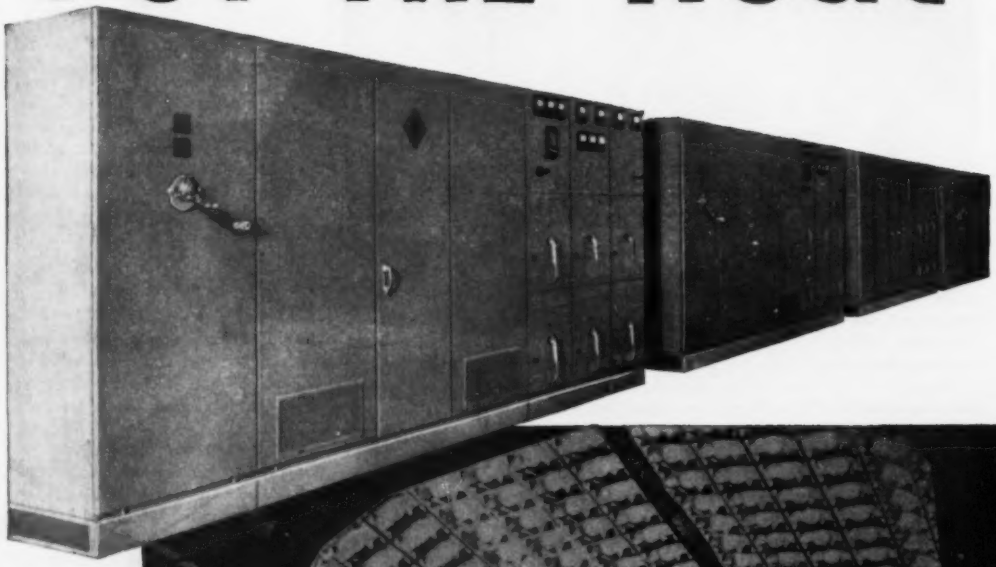
Boston Edison Co shows unique map of territory served . . . **Dayton Power & Light Co** has interesting chart on the economic assets of its territory . . . **Detroit Edison Co** includes a good table on statistical comparisons for one and ten-year periods . . . **Consolidated Gas, Electric Light & Power Co of Baltimore** has a good center-spread on "Our Company" which includes a history, business, territory served, properties, growth of business, dividend record, and customer and employee relations.

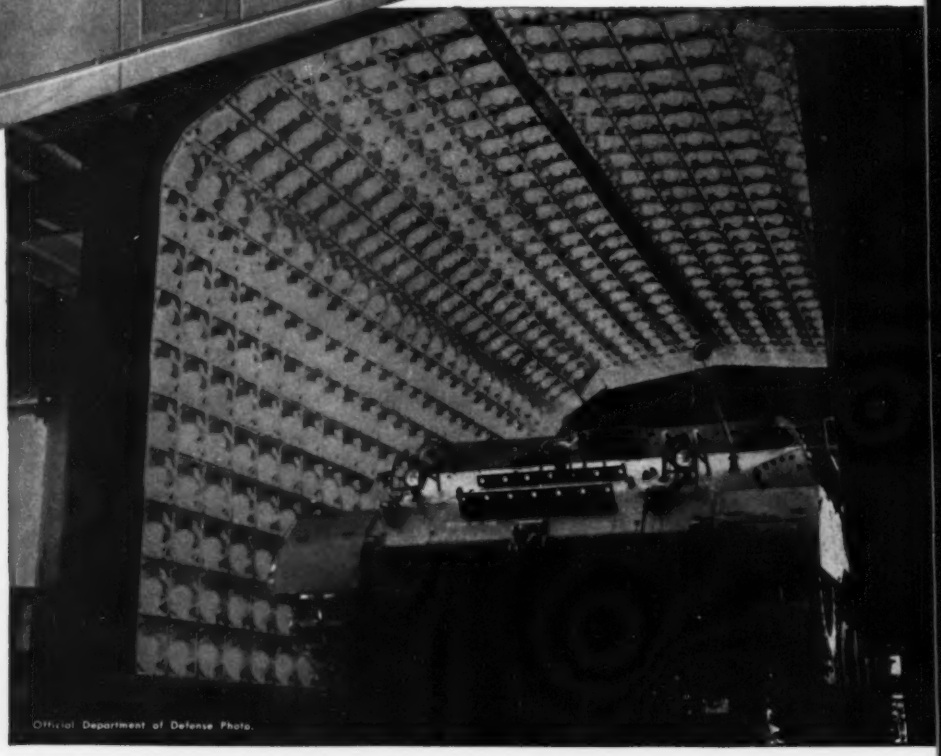
Niagara Mohawk Power Corp shows a simple and concise "Highlights of 1951" . . . **California-Pacific Utilities Co** makes a good chart presentation of its operating results . . . **Iowa-Illinois Gas & Electric Co** reports employing Ford, Bacon & Davis, engineering firm, to determine the value of company's property devoted to service in Illinois . . . **Interstate Power Co** says that in its 1951 customer opinion survey, over 90% of those who replied were satisfied with the service, and 88% said the service was either good or excellent.

Pennsylvania Power & Light Co reports "composite age of its property was 16.5 years" . . . **Kansas City Power & Light Co** has a simple chart on "How Electricity Is Produced in Steam Power Plants" along with an "Electric Distribution Chart".

ALLIS-CHALMERS

PUT THE "Heat"





Official Department of Defense Photo.

UNIT SUBSTATIONS

ON PRODUCTION!

YOU CAN INCREASE the production of your plant without adding production equipment or hiring more help . . . just eliminate undervoltage. Motors, lights, heating units—all electrical equipment gives top performance only when operated at full voltage.

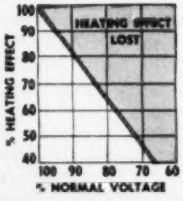
Paint baking or drying operations take longer when voltage drops. For example, a 10% drop reduces heating effect of infra-red lamps 19% . . . slows production. One paint drying operation required 63% more time when voltage dropped 10%.

A major cause of undervoltage is long, heavily loaded 480 volt feeders. Install Allis-Chalmers LCS Unit Substations at load centers and eliminate excessive line drop by shortening low voltage cables. Performance of all electrical equipment will improve . . . and personnel efficiency will increase because of better illumination from existing lighting fixtures.

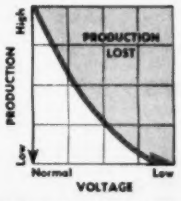
You can count on the cooperation of experienced Allis-Chalmers substation engineers in working out your distribution system. Allis-Chalmers LCS Load Center Unit Substations are neat, compact, easy to install and provide protection to personnel. Get in touch with your A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3372

LCS Unit Substations

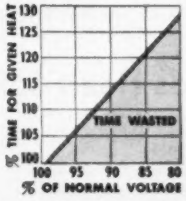
HOW UNDERVOLTAGE WASTES MANHOURS . . . CUTS PRODUCTION



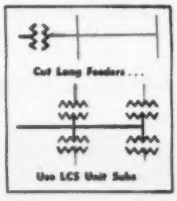
FULL OUTPUT from existing equipment demands full voltage. Heat output of infra-red lamps (used for baking paint on metal, drying coils of electrical apparatus and similar applications) drops with undervoltage. Output of resistance furnaces also drops off as the square of undervoltage.



PRODUCTION LOSSES RESULT from undervoltage. In one case a 10% drop in voltage cut the output of an infra-red drying oven from 1500 pounds per hour to 1275. Undervoltage means less work done each day . . . greater overhead for the work done, more manhours to be figured into every job.



TIME IS WASTED when undervoltage is distributed to infra-red bulbs and other heating devices. It takes longer to deliver the same amount of heat . . . longer to do a given job. In one plant, drying time for black painted sheet steel increased from 11 to 18 minutes by a 10% drop in voltage.



A MAJOR CAUSE OF UNDERVOLTAGE is voltage drop in secondary feeders. Long low voltage lines may prove inadequate as production schedules are stepped-up and new machines added. Install substations at load centers to cut feeder length, reduce voltage drop and increase production.

ALLIS-CHALMERS

A-C ALLIS-CHALMERS

CONSTRUCTION of infrared brooders is demonstrated by the author to some of the 22 4-H Club members who took part in the program

INFRARED BROODING produced chickens of this quality for Beverly Carpenter of Kirkwood, N. Y., who built a brooder in the workshop

Utility Helps 4-H Members Build Infrared Brooders

KENT BLAIR, New York State Electric & Gas Corp, Binghamton

An opportunity for young farmers to learn of the advantages of infrared lamps for chicken brooding was provided by one of the 4-H projects sponsored by New York State Electric & Gas Corp. In cooperation with the Broome County 4-H Club, the company made available and supervised a workshop where 4-H members built their own infrared brooders. To encourage the boys and girls to put their brooders into operation on a business basis, the 4-H arranged with the local Kiwanis Clubs to give each 4-H member 50 chicks in return for equivalent value in dressed birds at maturity.

Under the direction of the author, 22 boys and girls enrolled in the project. They made brooders consisting of sockets and wiring for two heat lamps mounted on a wooden frame. Material provided by the 4-H members included a pre-cut 1x4-in. piece of lumber, a screwdriver, and a pocket knife. The company furnished the other items at a special price. As an incentive for better workmanship, the company offered an electric clock as a prize for the best brooding results.

At the end of the brooding season, the company sent requests to the children for their opinion of the project and of brooding with infrared heat lamps. Of the 14 replies, the following from a 4-H girl is typical: "The results were fine using this system. The chicks were always very lively. They seemed to be healthier and feather out faster."

Electric Living Aids Heart Sufferers

EDISON ELECTRIC INSTITUTE'S Home Service Committee inspect the "Heart Kitchen" trailer during their February meeting in Indianapolis

Electric kitchens have come to the aid of sufferers from heart ailments. A "trailer" kitchen especially designed to meet their needs has been presented to the Indiana Heart Foundation by four electric companies in the state. The time-saving ideas incorporated are based on research studies made by engineers and home economists at Cornell, Wisconsin, Purdue, and Columbia Universities, and are practical for all housewives, not just those with heart disease.

Companies making the presentation to the Heart Foundation were: Indianapolis Power & Light Co; Public Service Co of Indiana; Indiana & Michigan Electric Co; and Southern Indiana Gas & Electric Co. The trailer was fitted out in Ft. Wayne and pres-

entation was made to the Indiana Heart Foundation in Indianapolis on Feb. 11. H. T. Pritchard, president, Indianapolis Power & Light Co, made the presentation which was accepted for the Indiana Heart Foundation by Dr. Kenneth G. Kohlstaedt, president, and T. A. Kleckner, executive secretary.

Through National Heart Week the trailer was stationed in front of the Indianapolis Power & Light Co office building and was visited by 300 persons daily. It was then taken to Evansville for public inspection and later will be shown throughout the state.

The idea for the "Heart Kitchen" was developed by P. W. Ross, vice-president and assistant to the president, and A. C. Crandall, vice-president in charge of sales, Indianapolis Power & Light Co. Extensive research and planning for kitchen and laundry details were done by Mrs. Harriet West, home service director, and Mrs. Margaret Sommers, kitchen planning advisor, Indianapolis Power & Light Co.

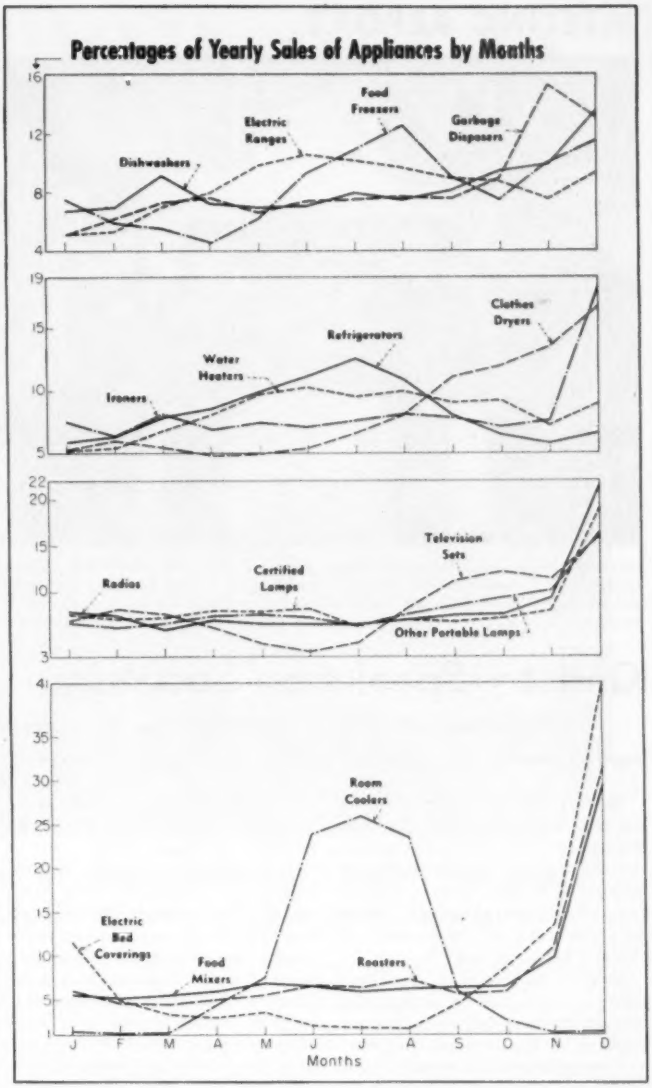
Cleveland Realtor Pushes Electric House Heating

"Sensational! The All Electrically Heated Home." That is the heading of a two-thirds-page advertisement run by the Jimmy Brown Realty Co in a Sunday issue of the Cleveland Plain Dealer in February. The house pictured and described in the ad is priced at $14,500, is on a foundation 28 ft x 28 ft, has three bedrooms, and in addition to heating is electrically equipped with automatic washer, clothes dryer, ironer, refrigerator, garbage disposer, range, and 52-gal water heater.

Additional information supplementing that in the ad was obtained from the Continental Radiant Glass Heating Corp, maker of the heating equipment:

The project includes 235 homes, of which four have been built. In each are nine 1,000-watt glass panels controlled by individual thermostats. Cost for heating is estimated at $180 per year.

According to other information, about 8,000 people visited the sample home on the first day it was open. This is an indication of popular interest. There are some 170 electrically heated homes in Cleveland now.



Seasonal Variations in Appliance Sales

As a help to dealers in seasonal scheduling of sales efforts, West Penn Power Co compiled monthly percentages of appliance sales in 21 categories. Data of sales as reported by dealers over the 5-year period, 1947-1951, were averaged by months. These averages were then expressed in percentages of the average of annual totals.

Of the 21 categories, 16 are shown in the accompanying graph. The remaining five have comparatively small variations in sales volume month by month, indicated little or no seasonal effect on sales. They are automatic washers, with sales percentage range from 6.9 in April to 11.3 in December; non-automatic washers, 7.3 in November to 9.3 in December; cleaners, 6.5 in July to 14.6 in December; incandescent fixtures, 6.7 in January to 9.7 in October; fluorescent fixtures, 6.2 in January to 11.1 in December.

The importance of electric housewares as Christmas gifts is apparent in the graph.

LISTENING IN to private companies' Niagara story at a display set up at Edison Electric Institute Sales Conference are (l to r) Ralph P. Wagner and L. D. McCormac, both of Niagara Mohawk Power; Charles K. Stover, New York State Electric & Gas; Harris E. Dexter, Central Hudson Gas & Electric; W. A. Lyons, New York State E&G; and F. T. McEvoy, Niagara Mohawk

Gadsby Speaks on Socialism

EEI president tells annual sales conference the government is now an announced competitor of the power companies

Neither letters from the President nor speeches by the Secretary of the Interior can alter the fact or change the definition of socialism, asserted George N. Gadsby, Edison Electric Institute president, at the 18th annual sales conference of the institute, in Chicago, March 31-April 3.

Speaking on "Socialism as a Competitor," Gadsby said the federal government has now put off its various disguises of flood control, irrigation and navigation, and announced itself frankly as a competitor against its citizens in the electric power business.

Big Job Ahead . . . The big job of the power companies is to make effective presentation to the people in their service areas of the facts of governmental spending on socialized electricity in the face of a mounting national debt and higher taxes, Gadsby said. He urged the companies to support and work with the agencies organized for dissemination of the facts.

Encouraging results were reported by William A. Lyons, New York State Electric & Gas Co, from efforts to present to the public the power company case for increased power development at Niagara Falls.

In his address opening the general sessions of the conference, M. E. Skinner, Union Electric Co of Missouri, chairman, cited two matters of acute concern in power company sales operations. Inflation is the cause of both. Compared with other costs of living the price of electricity has risen very slowly, he pointed out. This has resulted in a disturbing unbalance between the costs of electricity and of the equipment for using it.

A more important problem arising out of inflation is the cost of sales operations, Skinner declared. It probably costs twice as much now to maintain a salesman in the field as it did before the war. His efficiency can be increased by training and providing him with better sales tools.

Balanced Program . . . A balanced electric utility sales program, said Walter H. Sammis, Ohio Edison Co, is one that brings most benefit to the area served by the utility and thus to the utility itself. The activities of the sales department should not be limited to direct selling, but should include assistance to appliance makers, distributors and dealers; cooperation with educational and other groups in promotion of farm electrification; and participation in movements to attract new industries and improve community conditions.

Prizes for outstanding accomplishments in promotion of electric service were awarded to following utilities:

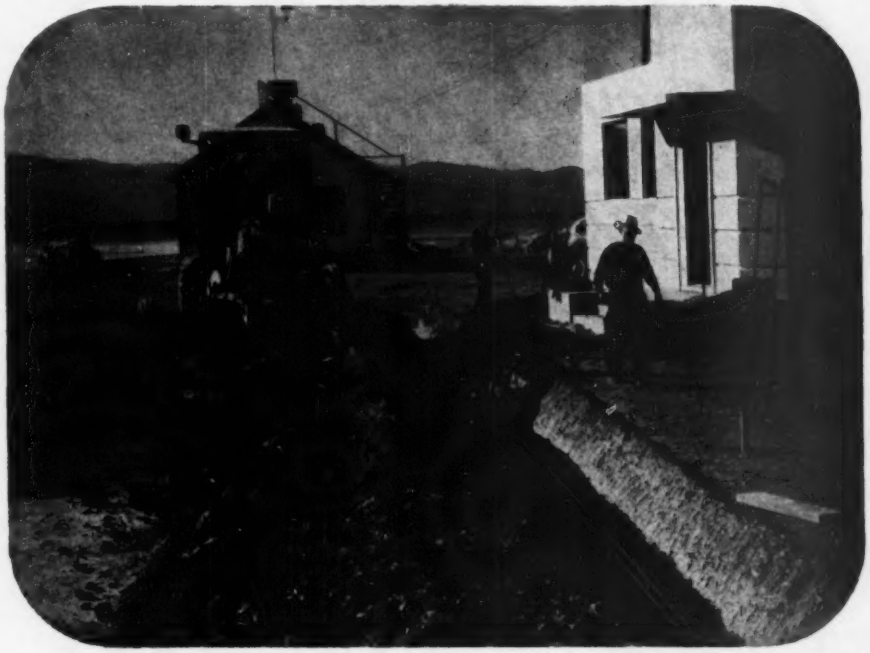
Hughes Awards—Class I, Division A—Southern California Edison Co; Class II, Division A—Carolina Power & Light Co; Division B—Kentucky & West Virginia Power Co; Class III, Division A—Metropolitan Edison Co, Division B—Central Ohio Light & Power Co; Class IV, Division A—Cincinnati Gas & Electric Co, Division B—Iowa Power & Light Co; Class V, Division A—Pennsylvania Power & Light Co, Division B—Hartford Electric Light Co.

McCall Awards—Division A—Mrs. Marguerite Surles, Carolina Power & Light Co; Division B—Miss Joreka Rippetoe, Kingsport Utilities, Inc; Division C—Miss Emily Lewis, Ohio Power Co; Miss Fern Brannen, Southwestern Public Service Co; Miss Floy May, Alabama Power Co.

Planned Lighting Awards—Residential, New Orleans Public Service Inc, Georgia Power Co; Commercial Duquesne Light Co, Detroit Edison Co, Ohio Power Co; Industrial, Public Service Electric & Gas Co, Consolidated Gas, Electric Light & Power Co of Baltimore.

RECEIVING Thomas W. Martin Award is R. E. Johnson (center) Toledo Edison Co. E. C. Easter, Alabama Power Co (right) makes presentation as G. E. Whitwell, Philadelphia Electric Co and awards chairman looks on

PARKWAY CABLE



Save the cost of duct systems!...with the most dependable Parkway Cable you can buy!

ROEBLING'S research staff is continually working at the job of product development. Our manufacturing facilities and techniques are constantly improved. That's why our Parkway Cable for distribution and general power supply circuits is today even more dependable than ever before.

Roebling Parkway Cable saves money right from the start because it is buried directly in a shallow, low-cost trench. It is made in single and multiple conductor – solid or stranded – in a range from 600 to 5,000 volts... furnished with metallic armor or a non-metallic *Roeprene* sheath, depending on the physical protection required. Types that pass all C.A.A. requirements for Specification No. L-824 for airport lighting are also available.

Large quantities of Roebling's full line of electrical wires and cables are needed in the rearmament program. We and our distributors will do everything possible, however, to meet your requirements. John A. Roebling's Sons Company, Trenton 2, N. J.

ROEBLING

ATLANTA, 934 AVON AVE • BOSTON, 51 SLEEPER ST & 5 PITTSBURGH ST • CHICAGO, 5525 W. ROOSEVELT RD • CINCINNATI, 3253 FREDONIA AVE • CLEVELAND, 701 ST. CLAIR AVE, N. E. • DENVER, 4801 JACKSON ST • DETROIT, 915 FISHER BLDG • HOUSTON, 6216 NAVIGATION BLVD • LOS ANGELES, 5340 E. HARBOR ST & 120 S. HEWITT ST • NEW YORK, 19 RECTOR ST • ODESSA, TEXAS, 1920 E. 2ND ST • PHILADELPHIA, 230 VINE ST • PITTSBURGH 1301 CLARK BLDG • ROCHESTER, 1 FLINT ST • SAN FRANCISCO, 1740 17TH ST • SEATTLE, 900 1ST AVE S. • ST. LOUIS, 3001 DELMAR BLVD • TULSA, 221 N. CHEYENNE ST • EXPORT SALES OFFICE, TRENTON 2, NEW JERSEY

It pays to say "G-E" whenever you order fuses

Check these Important Types of G-E Fuses

When you order fuses, make it a point to specify General Electric fuses. They're designed to save maintenance time, provide dependable protection. Check the wide range of applications covered by the G-E fuse line:

G-E RENEWABLE TIME-DELAY FUSES

Designed to meet the demands of today's increasing loads, G-E renewable time-delay fuses ride out momentary overloads—blow when current reaches critical point. Three-piece assembly makes renewing links an easy job. For 250 and 600 volts, from 3 amp to 600 amp.

G-E ENCLOSED ONE-TIME FUSES

These sturdy fuses have been the accepted standard over the years. High-purity zinc and carefully soldered connections are among the extras you expect—and get—in G-E fuses. For 250 and 600 volts from 1 amp to 600 amp. Also available with silvered ends in the G-E Silvend line.

PLUG FUSES

For residential or industrial use, recommend famous G-E transparent-top plug fuses, with easy-to-read ratings, tough glass top. For 125 volts from 3 to 30 amp.

Next time you order fuses, remember to specify fuses from the General Electric line. Section D27-427, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

You can put your confidence in—

GENERAL ELECTRIC

Analysts to Visit Utility Plants

Financial experts will undertake survey of American industry in connection with NFFA annual convention

For the first time in the history of Wall Street, members of the National Federation of Financial Analysts Societies will undertake, as a group, a grass roots survey of American industry. This collective, on-the-spot study by experts of financial houses doing the bulk of the nation's investment business has been arranged in connection with the 1952 Annual Convention of the NFFA to be held in San Francisco on May 5th and 6th.

According to Pierre R. Bretey, president of the federation, over 400 members will view 47 plants of leading industrial corporations, with 1950 revenues exceeding $10 billion. The group will tour West Coast power facilities. The field trip is expected to last three weeks—from April 29th through May 20th. Among the states to be visited are Illinois, Colorado, Utah, California, Oregon, Washington, Texas, Louisiana, and Mississippi.

NFFA members from New York, Philadelphia, Richmond, Providence, Boston, and Montreal will meet with contingents from Cleveland, Detroit, and St. Louis on April 30th in Chicago, it was announced. During their stay there, the analysts will tour the railroad marshalling yards and discuss current railroad problems with 30 railroad executives at a luncheon.

PS of Colorado to be Visited . . . On their way to the West Coast, the analysts are scheduled to stop over in Denver, Colo., where they will survey the hydroelectric plant and other installations of the Public Service Company of Colorado. Next on the list are the blast furnaces, open hearths, Bessemers, and sheet mills of the United States Steel plant at Geneva, Utah. At Bingham, Utah, they will see the Kennecott open-pit copper mine—the largest such mine in the world.

Following the two-day NFFA convention at the Fairmount Hotel in San Francisco, one group of analysts will go by special plane to Oregon and Washington to visit Kaiser Aluminum & Chemical Corp, Anaconda Copper Mining Co, Portland General Electric Co, Pacific Power & Light Co, Mountain States Power Co, Washington Water Power Co, and Montana Power Co.

Another group will tour Douglas Aircraft, Southern California Edison Co, Pacific Gas & Electric Co, and San Diego Gas & Electric Co.

On the return trip back East, visits will be paid to the plants of chemical, sulphur, and oil companies in the area of Houston, Tex., railroad and aluminum plants in New Orleans, and rubber and building equipment material companies in Natchez, Miss.

Florida Power Ordered to Cut Pinellas Rates

The Florida Public Utilities Commission has affirmed a Pinellas County Utilities Board reduction in rates of Florida Power Corp and ordered the company to refund about $1 million to customers in the county.

Refund to customers will be made from a special fund in which the company has been depositing the excess of rates set by the utilities board pending the settlement of the long rate dispute.

The PUC directed Florida Power to withdraw from the Supreme Court its appeal from the Pinellas County Circuit Court order upholding the council board rates.

If the company withdraws its appeal, the commission has ruled, then it may put into effect a system of automatic billing adjustments that would allow rate adjustments monthly on fuel costs in billing power users.

FINANCIAL BRIEFS

Snohomish County PUD, Everett, Wash., has adopted a resolution instructing Guy C. Meyers, fiscal agent, to represent the PUD in making a purchase offer to the Puget Sound Power & Light Co. It thus becomes the sixth PUD to approve the purchase plan made in accordance with the report of R. W. Beck & Associates, utility engineers, leaving only the Whatcom PUD yet to act.

St. Joseph Light & Power Co is planning to sell $1.5 million bonds and 5,000 shares of preferred stock.

REGULATION

Madison, N. J. Chamber of Commerce has appointed a subcommittee to confer with the Borough Council in an attempt to work out a solution to "high electric rates" charged by the borough-owned and operated utility . . . **Virginia State Corporation Commission** has deferred for 60 days a request by Appalachian Electric Power Co for 9% rate increase, pending outcome of a similar request the company has made in West Virginia . . . **Consolidated Gas, Electric Light & Power Co** of Baltimore has asked Maryland PSC approval to increase electric and steam rates, temporarily, about 10.4%.

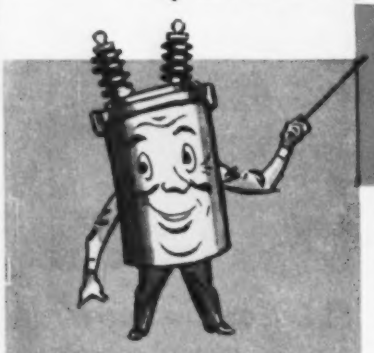
Mississippi Valley Public Service Co has asked Wisconsin PSC for an electric rate increase.

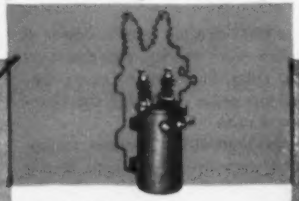
SEC Commissioner?

Clarence H. Adams, Bloomfield, Conn., member of Putnam & Co., a member of the New York Stock Exchange, has been approved unanimously by the Senate Banking subcommittee to be a member of the Securities and Exchange Commission.

BALANCED

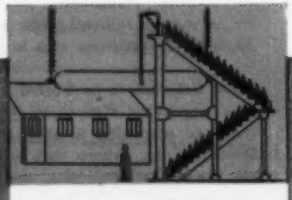
HiperCore 4 point superiority for Balanced Performance





1. Smaller Size

Reductions in size range up to 30% because the oriented cold-rolled silicon steel used in HiperCore Transformers has 30% to 35% higher flux carrying capacity. Consequent reductions in the weights of steel, copper, oil and other materials used results in a smaller and lighter weight transformer with decidedly improved all-around characteristics.



2. Surge-Tested Design

Maloney HiperCore Transformers are of surge-tested design. Maloney's 3,600,000 volt surge generator is used to test the ability of HiperCore Transformers to withstand lightning and other surges. Surge-tests far in excess of normal operating conditions are run to insure a longer, more efficient, trouble-free operating life.

FACTORIES AT ST. LOUIS 20, MISSOURI AND TORONTO, ONTARIO, CANADA

PERFORMANCE

. . . the result of skill and experience

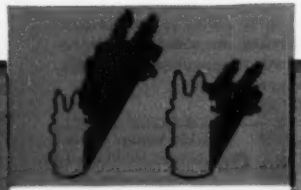
IT looks so easy! But . . . you know it's not! This fellow has to keep his mind on his work and walk a straight line. So it is with a transformer . . . it must keep working day and night. It must operate efficiently under normal conditions in addition to being able to handle overloads, surges, and what have you, without an interruption of service . . . in short, *balanced performance.* Thus *balanced performance* cannot be achieved when one feature is emphasized at the expense of other features. Therefore, it would be well to check all the features of a transformer to be sure that it will perform as you want it to . . . *continuously* and *efficiently.* We feel that such precaution will result in the selection of Moloney HiperCore Transformers for your distribution system.

MEBB-10

MOLONEY ELECTRIC COMPANY

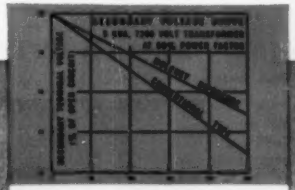
Manufacturers of Power Transformers • Distribution Transformers • Load Ratio Control Transformers • Step Voltage Regulators • Unit Substations

SAINT LOUIS 20, MISSOURI



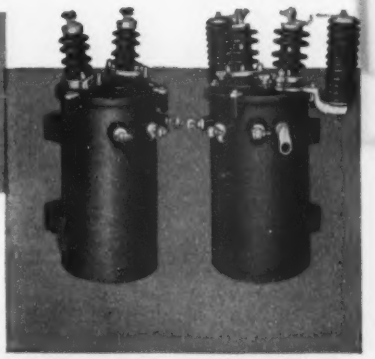
3. Greater Short-Time Overload Capacity

Moloney HiperCore Transformers have improved short-time overload characteristics which provide better peak load performance and longer life. Reduced coil mass, achieved through use of oriented steel cores, together with the extensive use of cooling ducts, results in more rapid cooling of the windings and in a lower hottest-spot temperature gradient.



4. Better Voltage Regulation

The smaller cores of HiperCore Transformers make possible windings having lower impedance. Lower impedance provides lower internal voltage drop at all loads. This is especially important during peak load periods, since HiperCore transformers can carry higher overloads than older types, at the same permissible regulation.



MOLONEY ELECTRIC = { BETTER PERFORMANCE / GREATER RELIABILITY / LESS MAINTENANCE

SALES OFFICES IN ALL PRINCIPAL CITIES

Today in Utility Finance

YIELDS (%)

Quality	Bonds			Preferred Stocks			Common Stocks		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
DATE									
1952									
April 3	2.95	2.98	3.11	4.09	4.26	4.65	5.33	6.03	6.49
March 27	2.95	2.99	3.13	4.11	4.29	4.66	5.35	6.03	6.47
1st 1952	2.95	2.99	3.13	4.11	4.29	4.66	5.35	6.03	6.47
4th 1951	3.02	3.07	3.21	4.32	4.50	4.91	5.42	6.18	6.84
3rd 1951	2.87	2.91	3.04	4.05	4.27	4.61	5.52	6.24	7.05
2nd 1951	3.02	3.11	3.23	4.11	4.37	4.68	5.73	6.38	7.37

Data: Reis & Chandler, Inc.

EARNINGS

Company	Period Months	Ended	Net Income 1952	Net Income 1951	Earnings Per Common Share 1952	Earnings Per Common Share 1951
Consolidated Gas of Baltimore	12	Feb.	$2,203,873	$2,356,617	$ 41	$ 45
Gulf States Utilities	12	Jan.	5,966,367	6,114,132	1 61a	1 86a
			1951	1950	1951	1950
Alabama Power	12	Dec.	$10,132,972	$9,474,730	$	$
American Gas & Electric, consolidated	12	Dec.	24,637,194	24,191,232	4 55a	4 86a
Central Power & Light	12	Dec.	4,176,688	4,503,476	....	....
Hilo Electric Light	12	Dec.	155,452	133,200	....	....
Kansas Power & Light	12	Dec.	3,918,538	4,365,365	....	....
New Jersey Power & Light	12	Dec.	1,393,127	1,311,373	....	....
New York State Electric & Gas	12	Dec.	6,290,246	5,927,114	2 18a	2 30a
Northern States Power	12	Dec.	12,059,006	12,440,592	85	93
Oklahoma Gas & Electric	12	Dec.	4,960,403	4,703,188	1 76a	1 82a
Otter Tail Power	12	Dec.	1,343,053	1,581,065	1 63	2 06
Pacific Power & Light	12	Dec.	3,596,321	3,261,090	1 57	1 45
Southern Co.	12	Dec.	16,904,728	16,345,474	1 03a	1 06a
Southwestern Gas & Electric	12	Dec.	3,297,908	3,276,404	....	....
Toledo Edison	12	Dec.	4,538,096	4,867,802	91	1 00
West Penn Electric, consolidated	12	Dec.	10,442,821	11,172,450	2 96	3 49
West Penn Power, consolidated	12	Dec.	8,397,505	8,985,421	....	....
Wisconsin Power & Light	12	Dec.	3,644,516	3,479,890	....	....

Note—The figures shown for the last 17 companies have been audited.
a—On shares outstanding at end of each year.

FINANCING

Company and Description	Amount of Offering ($000)	Offering Price	Yield to Public
WEEK OF APRIL 3-9			
Bonds			
Omaha (Neb.) Public Power District—electric rev 1954-1982	$17,000	various	1.10-2.15%
Consumers Power—1st mtg 3¼% 1982	25,000	102.973%	3.11
Common Stock			
Colorado Central Power—17,306 sh (being offered to commonholders on 1-for-11 basis, record March 5 to expire April 7)	$273	$15.75	6.35%
WEEK OF APRIL 10-16			
Bonds			
Wisconsin Power & Light—1st mtg 1982	$7,000	.....	.....
Common Stock			
Southern California Edison—800,000 sh	.....	.....	* .....
SCHEDULED FOR APRIL			Bid Date
Bonds			
Alabama Power—1st mtg 1982	$12,000	....	April 22
Union Electric Co of Missouri—1st mtg 1982	30,000	.....	April 29
Worcester County Electric—1st mtg 1982	4,000	.....	.....
Preferred Stock			
Wisconsin Power & Light—15,000 sh 4.80% cum (being offered to preferred stockholders, record March 31 to expire April 21, subject to allotment in the case of oversubscriptions)	$1,500	$101.50	4.73%
Common Stock			
Interstate Power—345,833 sh (being offered to commonholders on 1-for-6 basis (a), record April 4 to expire April 18)	$2,991	$8.65	6.94%
Wisconsin Power & Light—288,208 sh (being offered to commonholders on 1-for-7 basis, record March 31 to expire April 21)	4,943	17.15	6.53
Indianapolis Power & Light—196,580 sh (to be offered to commonholders on 1-for-7 basis (a), record April 10 to expire April 24)	.....	.....	.....
South Carolina Electric & Gas—417,719 sh (to be offered to commonholders on 1-for-5 basis, record about April 15 to expire April 30)	.....	.....	.....
Carolina Power & Light—200,889 sh	.....	.....	**April 17
Gulf States Utilities—300,000 sh	.....	.....	April 22
Tucson Gas, Electric Light & Power—140,000 sh	.....	.....	April 23

* Depending upon market conditions, offering by First Boston-Harris Hall & Co group, underwriters expected during the week of April 14. ** To be offered by Merrill-Lynch-R. S. Dickson & Co group, underwriters. a—Stockholders are allowed oversubscription privileges.

Policy Manual Completed by WWP for Supervisors

A new "Supervisor's Policy Manual" recently has been completed by Washington Water Power Co to strengthen administrative control and improve management effectiveness, Pres Kinsey Robinson has reported.

It will be a tool of communication from top management through supervisors to employees, insuring faithful transmission and administration of top management policies.

The manual is divided into five main sections. The first is entitled "The Supervisor's Job," and deals with his responsibility to the company, his superior, associates, and employees. Basic duties of leadership are outlined together with instructions on how to instruct and how to indoctrinate a new employee.

The second deals with company history and organization, the third presents in resumé form state and federal legislation and regulations having to do with matters of employment, and the fourth contains a reprint of the union contract.

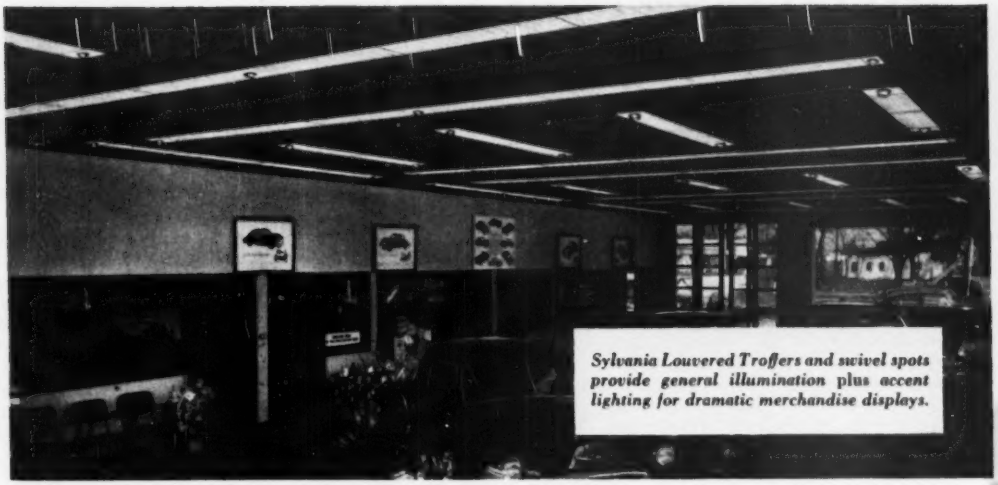
The fifth section is entitled "Company Policies." Each policy is briefly and simply written from the supervisor's viewpoint.

"We have included about 110 policies to start and more will be added as they occur to us or new ones are created," Robinson declared. They include accident reporting (personal injury), bulletin boards, complaints, horseplay, married women, outside employment, personal mail, visitors and telephone calls, promotions, recruiting, safety, suggestion system, unemployment compensation, and workmen's compensation.

Paying Out May Pay Off

The city commission in Bartow, Fla., recently voted to dig into the city treasury to pay part of the cost of installing new electric ranges and automatic water heaters for the rest of 1952.

The city hasn't gone suddenly benevolent. It expects to reap a reward for its outlay. The city runs its own light and water department and hopes to boost electric sales and thus revenues. The municipal power plant pays the major share of the city's operating expenses.



Sylvania Louvered Troffers and swivel spots provide general illumination plus accent lighting for dramatic merchandise displays.

DRAMATIC CEILING LIGHTING... FOR BETTER SEEING... BETTER SELLING

New versatile Sylvania Troffers make lighting a part of interior design. You can make lighting an integral part of ceiling design with the improved line of Sylvania Troffers.

These shallow, versatile units may be recessed in practically any ceiling to form decorative lighting patterns. They give ample illumination where required . . . without interrupting planned architectural simplicity.

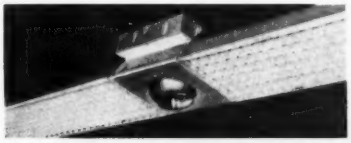
New flexibility

You'll find Sylvania Troffers adaptable to a great variety of modern needs. Available in two, four, six or eight-foot lengths . . . for single or continuous row installation. Equipped with choice of shieldings which include 45° x 45° louvers, translucent ribbed Albalite glass, Twinlite concentrator type lens, curved glass lens or light-weight plastic. Spotlights and corner boxes to match!

Easy maintenance is another important feature. Shielding frames are hinged for quick tube replacement . . . close tightly with a spring latch.

So, for new installations or remodeling jobs, remember Sylvania Troffers. New folder gives full details. Mail the coupon for your copy now.

Sylvania Troffers, with Albalite shielding, also provide attractive "pattern" lighting for informal or non-working areas.



Detail photo shows 45° x 45° louver shielded troffers in continuous row with swivel spotlight.

SYLVANIA

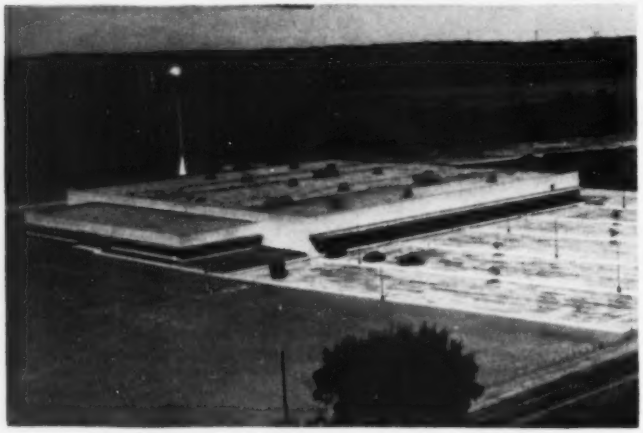
FIXTURES, FLUORESCENT TUBES, SIGN TUBING, WIRING DEVICES; LIGHT BULBS; RADIO TUBES; TELEVISION PICTURE TUBES; ELECTRONIC PRODUCTS; ELECTRONIC TEST EQUIPMENT; PHOTOLAMPS; TELEVISION SETS

Sylvania Electric Products Inc.
Dept. L-3104, 1740 B'way, N. Y. 19, N. Y.
Please send me illustrated folder describing the full line of Sylvania Troffers.

Name _____

Street _____

City _____ *Zone* ___ *State* _____



DUNCAN ELECTRIC MANUFACTURING CO's modern plant, located in picturesque Wabash Valley, Ind., occupies 100,000 sq ft. The buff-colored brick building has a limestone trim

Duncan Moves to New Plant

Meter company's facilities are located near Wabash River in Lafayette, Ind. Walkways have heating units

Duncan Electric Manufacturing Co has moved into its new plant at Lafayette, Ind.

The plant, situated on a 38-acre plot close to the Wabash River, has been constructed to house the manufacturing of meters. Brick for the 100,000-sq ft building is light buff in color and contains small specks of manganese. The trim is limestone augmented with aluminum, slate, and granite.

Plant's Power . . . The entire power and lighting load throughout the plant is served by a 277/480-v, 3-phase, 4-wire wye system. An independent conduit system carries the lighting feeders and branch circuits. General plant lighting is provided by standard 48-in., 40-w fluorescent fixtures equipped with 277-v ballasts. Connection to alternate phases provides a balanced 3-phase lighting load. The power feeders are carried in ducts through the center of each bay, providing for taps at any point. A bare grounding conductor, interconnected with the grounded neutral at the transformer bank, is carried through for grounding the frames and enclosures of all power equipment.

To provide flexibility, as few supporting columns as economically possible have been used in the manufacturing area which is all on one floor. The second level in this area is minimized by a sound absorbing rubber-coated glass-fibre ceiling.

Fumes Defeated . . . The plating room has been made virtually fume and vapor-free. Air for removing fumes is drawn from outside, blown across the surface of each tank and then exhausted. A careful balance of inlet and exhaust pressure prevents fumes and vapors from dispersing into the room.

All air in the building is cleaned, cooled, and maintained at a comfortable relative humidity.

Plant cafeteria, which commands a view of the Wabash Valley, has an "all-electric" kitchen furnished with stainless steel equipment.

Adequate parking areas have been provided for employees and visitors. Incoming walkways are kept clear of snow by steam and electrical heating units.

The Duncan company was founded at Lafayette in 1901 by Thomas Duncan. Until his death in 1929, Duncan was active in the affairs of the company.

GE Sales Hit Record High; Income Drops 20%

General Electric Co's sales broke all records in 1951. Net sales totaled $2,319,348,000 during 1951, an 18% increase over 1950 sales of $1,960,429,000.

Earnings, which were hit by higher taxes, declined to $138,117,000 from $173,424,000 in 1950, a 20% drop. Pre-tax earnings amounted to $415,617,000 in 1951 compared with $370,424,000 a year earlier.

Net profit was equal to 6¢ on each dollar of sales in 1951 compared with 8.8¢ in 1950. Earnings were equal to $4.79 and $6.01, respectively, a share on outstanding common stock.

GE had to set aside a total of $277,500,000 for federal taxes based upon income in 1951, or 67¢ out of every dollar of its pre-tax earnings and more than double the amount earned as net profit for its shareholders.

The company's inventories at the end of 1951 were carried at $571,355,000 compared with $338,774,000 at the beginning of the year. Expenditures for plant and equipment totaled $102,164,000 in 1951 compared with $58,237,000 in 1950.

In addition to a review of the company's financial status, GE's 60th annual report contained a forecast by Pres Ralph J. Cordiner. Cordiner predicted that a substantially greater market for electrical goods and services should be available to the industry during the next ten years than has existed in any corresponding period in the past. Long range forecasts of business in the electrical manufacturing field, based upon the assumption that our country will not become involved in another world war and that the spiral of inflation will not continue unabated, were used as the basis of his prediction.

Refined Copper Stocks Drop During February

Stocks of refined copper held in the United States by members of the Copper Institute, Inc, at the end of January and February totaled 60,836 and 59,747 tons, respectively. The January figure represents a decrease of 10,692 tons below the 71,528 tons held on Dec. 31, 1951.

During January deliveries to do-

mestic fabricators increased to 130,430 tons compared with deliveries of 119,577 in December. January's refined production increased to 100,269 tons from 98,532. In February deliveries to domestic fabricators decreased to 104,795 tons. Refined production for February dropped to 95,979 tons.

Outside the United States refined stocks on Jan. 31 amounted to 150,518 tons, a decrease of 1,685 tons below the December figure. January deliveries decreased to 85,473 tons from December's 104,169 tons. Refined production was 98,915 tons compared with 109,181. February's refined stocks increased to 154,691 tons. Deliveries in February decreased to 84,157 tons. Refined production dropped to 95,280 tons.

MANUFACTURING BRIEFS

Samica Corp has started construction of a new plant near Rutland, Vt., for the domestic manufacture of mica paper. This new grade of Micanite, made with mica paper instead of mica splittings, was developed recently by the research department of Mica Insulator Co, Schenectady, N. Y., one of the founders of Samica. Production of the material is expected to begin in July.

City of Cleveland has awarded a contract for six 2,000-kw rectifiers for its transit system to Brown Boveri Corp of New York as the main contractor with several American firms and the Swiss Brown Boveri Co supplying portions of the contract. Approximately $300,000 of the more critical equipment will be supplied by Brown Boveri, Switzerland, and over $500,000 by American firms.

SALES ASSIGNMENTS

COMPANY STAFFS

General Electric Co has appointed John T. Harrington regional manager for its communication equipment. Harrington, whose headquarters will be at 963 Commonwealth Ave., Boston, Mass., will be responsible for sales in all New England states, New York, northeastern Pennsylvania, New Jersey, Maryland, and Virginia. He has been a district sales representative for GE at Boston since 1945.

R. E. Uptegraff Manufacturing Co, Scottsdale, Pa., has opened an office at 53 W. Jackson Blvd., Chicago. Homer G. Hall is manager of the new office.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Ala., Anniston—Office of the Post Engineer, Anniston Ordnance Depot, Anniston tie lines, conversion of existing lines and existing lines and installing sectionalizing disconnect switches, primary electric distr. system, East Area.

Arizona-Nevada — Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., supervisory control and telemetering equipment for E.D. No. 2, E.D. No. 4 and Coolidge Sub-stations, Davis Dam Proj., Spec. DS 3667.

California — Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point of f.o.b. cars Roseville, outdoor power transformer for Nimbus switchyard, American River Div. Central Valley Proj., Spec. DS 3703, L. N. McClellan, ch. engr.

Illinois — Farmers Mutual Electric Co., Geneseo, 11 mi. 69 kv transmission line and sys. imprvs., Henry Co. $164,000.

Iowa—Iowa Public Service Co., 502 6 St., Sioux City, Ia., construction 120 mi. of high voltage transmission line, Sioux City to Fort Dodge. $250,000.

Md., Cedarcliff—Dist. P. Wks. Office, Potomac Naval Command, Naval Gun Factory, Wash., D. C., addn. to Bldg. 6, installation of generator, NOY 28081, Spec. 29762, Plans deposit $10; installing heating and plumbing facilities in Bldg. No. 128, NOY 70588, Spec. 32177.

Mass., Charleston—Dist. P. Wks. Office, First Naval Dist., 495 Summer St., Boston, steam generating equipment, auxiliaries, certain associated equipment power plant, Boston Naval Shipyard, NOY 70908, Spec. 31308.

Minn., Windom—City, M. C. Langley, clk., municipal power plant addn., furnish, install coal handling sys., mechanical equip., piping, electric equip., wiring, coal storage retaining wall, $150,000. Plans deposit $35, Pfeifer & Schultz, 702 Wesley Temple Bldg., Minneapolis, engrs.

Missouri—Northwest Electric Power Co-operative, Cameron, 117 mi. transmission lines, Caldwell, Livingston, Carroll, Charlton, Ray and Clinton Counties, Henningson, Durham & Richardson, Standard Oil Bldg., Omaha, Neb., engrs.

North Carolina—Blue Ridge Electric Membership Corp., Lenoir, 29 mi. rural distr. lines, Wilkes and Ashe Counties, N. C. 23AE. Plans deposit $10, B. O. Vannort Engineers, Inc., 700 S. College St., Charlotte, engr. Bids ?

Oklahoma—Southwestern Power Admin., P. O. Drawer 1619, Tulsa 1, Okla., REA sub-station Issa-463 at Anadarko, Caddo Co. $300,000.

Okla., Sulphur—Oklahoma Gas & Electric Co., 321 N. Harvey St., Oklahoma City, switching station at power plant. $110,000. Leo Lash, c/o owner, engr.

Oregon—U. S. Eng., Pittock Block, Portland, 3 turbine governors, Lookout Point Dam Power House. CIVENG 35-026-52-176.

Pa., Pittston—Scranton Electric Co., 507 Linden St., Scranton, electric power station addn. $10,000,000. Gilbert Associates, Inc., 412 Washington St., Reading, engr.

R. I., Quonset Point—Pub. Wks. Office, First Naval Dist., 495 Summer St., Boston, Mass., electronics shop as an addn. to Bldg. 60 at U. S. Naval Air Station, Spec. 31293. Plans deposit $40.

Tennessee — Forked Deer Electric Cooperative, Halls, 114 mi. rural distr. lines and sys. imprvs., at Halls $165,000. Sullivan & McWhorter, Stahlman Bldg., Nashville, Tenn. consult. engrs.

Texas—Bailey County Electric Co-operative, Muleshoe, electric distr. and transfer lines, sub-stations, Bailey Co. $200,000. H. N. Roberts & Assoc., Lubbock, consult. engrs.

Texas—Rusk-Panola Electric Assn., Carthage, reconstruct considerable electric power lines due to recent storm, Rusk and Panola Counties. $100,000.

Tex., Floydada—City, electric power plant imprvs. and extens. $200,000.

Man., Winnipeg—Canadian Broadcasting Corp., 1425 Dorchester St., W., Montreal, Que., converting Pigott Bldg. at 543 Portage Ave., incl. television and radio studios to serve Western Canada, $750,000.

Ont., Ottawa—Ottawa Hydro-Electric Power Comn., Hydro-Electric Bldg., Sparks St., sub-power, Lyon St., between Florence St. and Gladstone Ave. $425,000.

Ont., Sault Ste. Marie—Abitibi Power & Paper Co., Ltd., Sault Ste. Marie, Ont., plant imprvs. conversion hydraulic grinders to electrical operation. $750,000.

Low Bidders & Contracts Awarded

Illinois—Illinois Rural Electric Co., S. R. Faris, mgr., Winchester, Ill., Own Forces, $150,000, construct 133 mi. line conversion from single-phase to three-phase and from three-phase to heavy three-phase distribution and about 50 mi. 34.5 kv transmission line, 3 sub-stations.

Kans., Kansas City—S. Patti Constr. Co., Inc., 1340 Admiral St., Kansas City, Mo. LB $934,000. Power plant structure, Contr. K-19, Bd. P. Utilities, Kansas City, Kan. Bids Mar. 19.

Mass., Braintree—Tredennick-Billings Co., 10 High St., Boston, Mass. CA $248,423. Erection power plant addn. Town, Electric Light Dpt., 44 Allen St., Braintree, Mass. Bids Mar. 19.

Mich., Detroit—O. W. Burke Co., 1032 Fisher Bldg., Detroit, Mich. CA $95,000. 1 story, masonry Electric Distr. station, Livernois St. Detroit Edison Co., 3000 Second St., Detroit, Mich.

South Dakota — Wagner Electric Corp., 6400 Plymouth St., St. Louis, Mo., CA $102,732, Schedules 1 and 2, one 12,000 kva and one 15,000-kva auto-transformers each with 6 lightning arresters for Huron and Mt. Vernon substations.

General Electric Co., 650 17 St., Denver, Colo., CA, $94,006, Schedules 3 and 4, one 15,000-kva and one 7,500 kva. auto transformers each with 6 lightning arresters for Sioux Falls and Watertown sub-stations. Missouri River Basin Proj., Spec. DS-3597, Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo. Bids Feb. 21, Awarded Mar. 24.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

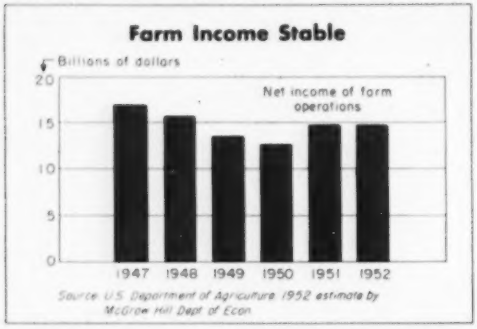
Ky., Winchester—Sylvania Electric Products Co., St. Mary's, Pa., photo flash bulbs plant on 26 acre tract, $4,000,000.

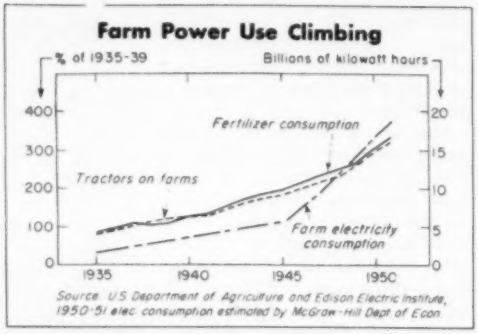
Mich., Kalamazoo — Upjohn Co., Kalamazoo, cortisone plant, $3,500,000; laboratory addn., $4,300,000; antibiotics plant, $3,400,000.

N. J., Ancora—N. J. State Div. Purchases & Property, State House, Trenton, plans by Epple & Seaman, 901 Broad St., Newark, State Mental Hospital, $12,000,000. Ellwood D. Powers, 972 Broad St., Newark, engr.

N. Y., New York—Dpt. P. Wks., Municipal Bldg., Zone 7, East Bronx General Hospital, Pelham Parkway, $16,461,000.

Tex., Houston — Alamo Chemical Co., Ship Channel, chemical plant, $5,000,000.





Money for More Electrified Farms

The nation's farmers are optimistic: Business this year should be even better than last. And that, indirectly, is good news for the electric utilities

Farm business this year promises to be as good as last. And 1951 was one of the best years on record (chart). That means farmers will have the money to keep electrifying their operations at a fast pace.

In 1951, farmers took in $35 billion of gross receipts and managed to keep almost $15 billion of net income. Prices are expected to average about the same in 1952. And the volume of marketings will be up about 5%. So gross income will top $39 billion. And despite rising expenses, net income should be about the same as in 1951.

Industrial profits are running lower this year. And industry's investment in new plant and equipment may slow up before the year is over. So it's an interesting contrast that farm income is likely to be stable—and that farmers' investment in new equipment is likely to hold up well.

Deferred Demand Building Up . . . It may also be that we're building up some deferred demand for farm modernization. Many types of new production equipment have been hard to get because of the metal shortage. Farmers appear to have stocked up on home appliances early in 1951. But again, this doesn't include some of the newer products.

All this is a cheerier picture than you'd get by looking at what's happened to farm prices so far in 1952. They've been slipping. And some people have taken this as the beginning of an agricultural recession.

But it isn't so. Farmers and food processors—like everyone else—have been jittery about holding inventory. More livestock and more feed grains than usual were thrown on the market this winter. So seasonal price weakness has lasted longer than expected. But you can look for farm prices to show some recovery in the months ahead. And farmers will more than make up their price losses this year with increased volume.

The Risks Are There . . . Of course, it's easy to point out risks in the farm situation. Inventories are high—particularly livestock inventories. And farmers have borrowed pretty heavily to finance this buildup. Costs are way up. And agriculture, more than industry, is vulnerable to swift and sudden price declines.

If general business takes a tailspin one of these years and consumer buying power drops, farm prices and farm incomes will be hit fairly hard. It won't be easy to get continued high investment in farm modernization.

But the farmers are in better shape than ever before to come through such a readjustment. Real estate debt is lower than prewar, although the value of farm real estate has doubled. And farmers' cash holdings are near an all-time high. Also government support payments would cushion the drop in farm income to a considerable extent. So barring a major depression, you can bet that the trend to more modern, more electrified farms will continue without much interruption. There are three basic reasons, all of which will increase in urgency during the next decade:

- Both population and per capita consumption of food are growing. By 1975, there will be five plates to fill for every four now.

- Farm labor is increasingly short. It must be replaced by mechanical power, or we can't boost production.

- Small subsistence farms are being consolidated into bigger farms. And much new capital is coming into farming from people who want to run farms as large scale businesses.

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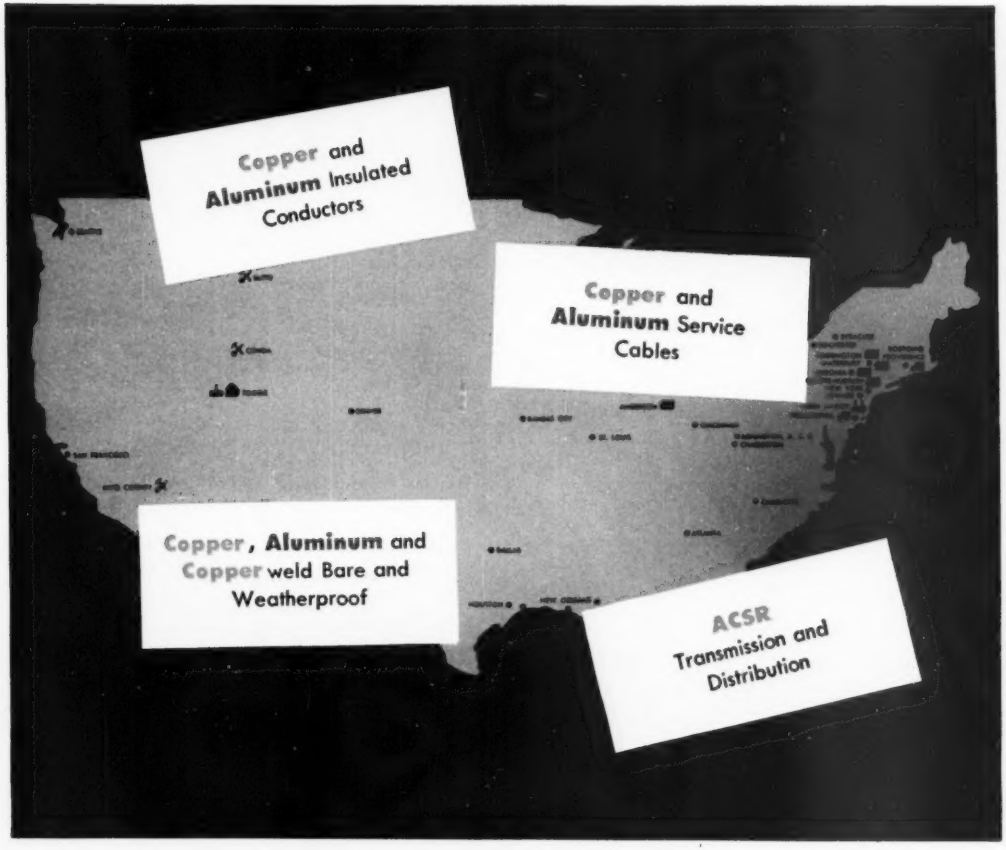
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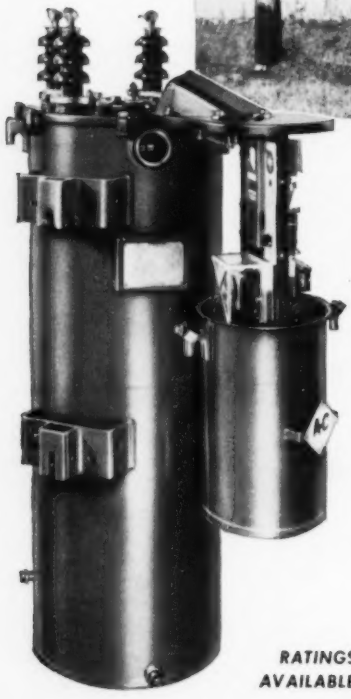

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